DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Accreditation Certificate** that

IMA Materialforschung und Anwendungstechnik GmbH
Am Lagerplatz 4, 01099 Dresden

operates a testing laboratory that fulfills the requirements according to DIN EN ISO/IEC 17025:2018 for those conformity assessment activities specified in detail in the annexes listed below. This includes additional existing legal and normative requirements for the testing laboratory including those in relevant sectoral schemes, provided that these are explicitly confirmed in the annexes listed below.

D-PL-13119-02-01	**Valid from: 08.09.2025**
D-PL-13119-02-02	**Valid from: 28.11.2022**
D-PL-13119-02-03	**Valid from: 28.11.2022**

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This accreditation certificate only applies in connection with the notice of 09.12.2025. It consists of this cover sheet, the reverse side of the cover sheet and the corresponding annex

Registration number of the accreditation certificate: **D-PL-13119-02-00**

Berlin, 09.12.2025 Tim Fuchs | Head of Service Unit

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-13119-02-01 according to DIN EN ISO/IEC 17025:2018

Valid from: **08.09.2025**

Date of issue: 09.12.2025

This annex is part of the Accreditation Certificate D-PL-13119-02-00.

Holder of the Accreditation Certificate:

IMA Materialforschung und Anwendungstechnik GmbH
Am Lagerplatz 4, 01099 Dresden

with the locations

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

IMA Materialforschung und Anwendungstechnik GmbH
Am Lagerplatz 4, 01099 Dresden

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Tests in the fields:

tribological, metallographical, spectrometrical and chemical analyses; mechanical strength and functional tests, mechanical vibration and shock tests as well as static and dynamic tests with internal pressure even under temperature loads on specimens, components, structures and complete products; mechanical-technological and physical tests on polymer materials and derived products; mechanical-technological, analytical and physical tests on pipe systems and their components and materials; Environmental simulation tests, mechanical vibration and shock tests and temperature and climate tests on devices, parts and components; Testing the noise behaviour of fittings and devices in water installations

Flexible Scope of Accreditation:

Within the indicated test areas the testing laboratory is permitted without being required to prior inform and obtain approval from DAkkS

[Flex A] to use standardised or equivalent test methods listed here with different issue dates.

[Flex B] to have the free choice from standardised or equivalent test methods.

[Flex C] to modify, develop or further develop test methods.

The test methods listed are examples. The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation. The list is publicly available on the website of the testing laboratory.

Content

The test methods are marked with the following abbreviations of the locations listed below where they are performed:

D1 =	D2 =
Wilhelmine-Reichard-Ring 4, 01109 Dresden	Am Lagerplatz 4, 01099 Dresden

1 Tribological, metallographical, spectrometrical and chemical analyses and their assessment of samples, components related samples, components, structures and completed manufactures [Flex C] (D1, D2)

Test type	Measurand/test parameter	Characteristic test methods
Abrasive wear	Wear mass Wm	DIN 50321 ASTM F1978
Sureface Topography	Length, roughness, Linear wear Wl	DIN 50321 ASTM F1978 DIN EN ISO 4287 DIN EN ISO 4288
Atonic emission spectroscopy	Element contents	DIN EN 14726 DIN EN 15079
Materialographic investigations	Length Phase fraction Morphology	ASTM E45 ASTM E112 ASTM E1077 ASTM F2111 DIN 50602 DIN EN 2003-009 DIN EN ISO 643 DIN EN ISO 945-1 DIN EN ISO 1463
Corrosion loading (Storage, immersion) - without additional mechanical load	Mass Length Temperature	DIN EN ISO 3651-1 DIN EN ISO 3651-2 DIN EN ISO 6509-1 VW-PV 1113 ASTM F2111
Corrosion loading (Storage,immersion) - with additional mechanical load	Crack length Force Time pH-Value Humidity Temperature	AITM 5-0013 DIN EN ISO 7539-4 DIN EN ISO 7539-6

Characteristic test methods (Abrasive wear, Surface finish)

ASTM F1978 2018	Standard Test Method for Measuring Abrasion Resistance of Metallic Thermal Spray Coatings by Using the Taber Abraser
ASTM G195 2021	Standard Guide for Conducting Wear Tests Using a Rotary Platform Abraser

DIN EN ISO 4287 2010-07	Geometrical Product Specifications (GPS) – Surface texture: Profile method – Terms, definitions and surface texture parameters
DIN EN ISO 4288 1998-04	Geometrical Product Specifications (GPS) – Surface texture: Profile method – Rules and procedures for the assessment of surface texture
DIN EN ISO 5470-1 2017-04	Rubber- or plastics-coated fabrics – Determination of abrasion resistance – Part 1: Taber abrader
DIN ISO 9352 2018-08	Plastics – Determination of resistance to wear by abrasive wheels
DIN 53754 1977-06	Testing of plastics; determination of abrasion, abrasive disk method
DIN 50321 1979-12	Wear-quantities

Characteristic test methods (Metallographic, Spectrometry)

ASTM B487 2020	Standard Test Method for Measurement of Metal and Oxide Coating Thickness by Microscopical Examination of Cross Section
ASTM E3 2011	Standard Guide for Preparation of Metallographic Specimens
ASTM E45 2018	Standard Test Methods for Determining the Inclusion Content of Steel
ASTM E112 2013	Standard Test Methods for Determining Average Grain Size
ASTM E340 2015	Standard Practice for Macroetching Metals and Alloys
ASTM E407 2015	Standard Practice for Microetching Metals and Alloys

ASTM E1077 2014	Standard Test Methods for Estimating the Depth of Decarburization of Steel Specimens
ASTM F 2111 2017	Standard Practice for Measuring Intergranular Attack or End Grain Pitting on Metals Caused by Aircraft Chemical Processes
DIN 30902 2016-12	Heat treatment of ferrous materials – Light-microscopical determination of the depth and porosity of the compound layer of nitrided and nitro-carburized ferrous parts
DIN 50602 1985-09	Metallographic examination; microscopic examination of special steels using standard diagrams to assess the content of non-metallic inclusions
DIN EN 14726 2019-06	Aluminium and aluminium alloys – Determination of the chemical composition of aluminium and aluminium alloys by spark optical emission spectrometry;
DIN EN 15079 2015-07	Copper and copper alloys – Analysis by spark optical emission spectrometry (S-OES)
DIN EN 2003-009 2007-07	Aerospace series – Test methods – Titanium and titanium alloys – Part 009: Determination of surface contamination
DIN EN 3114-001 2007-04	Aerospace series – Test method – Microstructure of (α + ß) titanium alloy wrought products – Part 001: General requirements
DIN EN 3114-002 2007-07	Aerospace series – Test method – Microstructure of (α + β) titanium alloy wrought products – Part 002: Microstructure of bars, sections, forging stock and forgings
DIN EN ISO 1463 2021-08	Metallic and oxide coatings – Measurement of coating thickness – Microscopical method
DIN EN ISO 643 2020-06	Steels – Micrographic determination of the apparent grain size
DIN EN ISO 945-1 2019-10	Microstructure of cast irons – Part 1: Graphite classification by visual analysis

DIN EN ISO 18203 2022-07	Steel – Determination of the thickness of surface-hardened layers
ÖNORM B 5024-3 2020-08-01	Valuation basis for materials in drinking water applications – Part 3: Metallic materials

Characteristic test methods for corrosion tests (Corrosion in the medium)

ASTM F2111 2017	Standard Practice for Measuring Intergranular Attack or End Grain Pitting on Metals Caused by Aircraft Chemical Processes
ASTM G47 2020	Standard Test Method for Determining Susceptibility to Stress-Corrosion Cracking of 2XXX and 7XXX Aluminum Alloy Products
ASTM G66-99 2018	Standard Test Method for Visual Assessment of Exfoliation Corrosion Susceptibility of 5XXX Series Aluminum Alloys (ASSET Test)
ASTM G67 2018	Standard Test Method for Determining the Susceptibility to Intergranular Corrosion of 5XXX Series Aluminum Alloys by Mass Loss After Exposure to Nitric Acid (NAMLT Test)
DIN EN ISO 3651-1 1998-08	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 1998-08	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
DIN EN ISO 6509-1 2014-09	Corrosion of metals and alloys – Determination of dezincification resistance of copper alloys with zinc – Part 1: Test method
DIN EN ISO 7539-4 1995-08	Corrosion of metals and alloys – Stress corrosion testing – Part 4: Preparation and use of uniaxially loaded tension specimens

DIN EN ISO 7539-6 2018-12	Corrosion of metals and alloys – Stress corrosion testing – Part 6: Preparation and use of precracked specimens for tests under constant load or constant displacement
AITM 5-0013 2018-10	Determination of Susceptibility to Environmentally Assisted Cracking and associated crack propagation of 7XXX Aluminium Alloy Products
VW-PV 1113 2007-10	AlMgSi Wrought alloy -Testing of Intercrystalline Corrosion Resistance

2 Mechanical strength and functional tests, mechanical vibration and shock tests as well as static and dynamic tests with internal pressure even under temperature loads on specimens, components, structures and complete products [Flex C] (D1, D2)

Test type	Measurand/test parameter	Characteristic test methods
Single component static and dynamic tests for tensile compressive torsion flexure	Tensile load	DIN EN 13749 UIC 517
	Compression force	
	Torsional moment	
	Displacement/Deformation	
	Angle	
	Elongation	
Abrupt stress loads (Impact test)	Energy	AITM 1-0010
	Velocity	
	Load	
	Acceleration	
	Mass	
	Drop Height	
Environmental simulation	Humidity	DIN EN 2823 ASTM 5229 DIN EN 60068-2-14 DIN EN 60068-2-30
	Temperature	

Test type	Measurand/test parameter	Characteristic test methods
Internal pressure with/without superimposed mechanical load	Differential pressure	IMA-PV C/4 IMA-PV C/5 IMA-PV C/6 IMA-PV C/7
	Tensile / Compression force	
	Displacement	
	Elongation	
Multiple component static and dynamic tests	Load	DIN EN 13749 DIN EN 12663-1
	Torsion moment	
Stress and strain measurements	Displacement	TSI_WAG UIC 517 IMA-PV C/8 AK-LH-14 DIN EN 12082
	Angle	
	Elongation	
	Air speed/Windspeed	
	Revolutions per minute	
	Acceleration	
	Temperature	
Multi-axial vibration test with servo hydraulics	Acceleration vibration	IMA-PV K/1 IMA-PV K/2
	Vibration displacement	
	Frequency of vibration acceleration	
Hot gas flow	Temperature	IMA-PV K/1
	Mass flow	
	Humidity	
Bursting pressure test	Dynamic pressure	DIN EN ISO 19879
Dynamic pressure test	Pressure frequency	
	Vibration	
Compression test with simultaneous bending	Vibration frequency	
	Dynamic pressure	

Characteristic test methods, belonging to the above-mentioned test types

DIN EN 13749 2021-05	Railway applications – Wheelsets and bogies – Method of specifying the structural requirements of bogie frames
DIN EN 12663-1 2015-03	Railway applications – Structural requirements of railway vehicle bodies – Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)
DIN EN 12082 2021-09	Railway applications – Axleboxes – Performance testing
DIN EN ISO 19879 2011-01	Metallic tube connections for fluid power and general use – Test methods for hydraulic fluid power connections

3 Mechanical strength and functional tests on specimens, specimen similar structural elements, components, structures and complete products [Flex C] (D1, D2)

Test type	Measurand/test parameter	Characteristic test methods
Tensile testing Compressive testing (axial) Bend testing Shear testing	Load	DIN EN 2002-1 DIN EN 2002-2 DIN 50100 DIN ISO 614 DIN ISO 4506 ASTM E8 ASTM E9 ASTM E399 DIN EN ISO 6892-1 DIN EN ISO 6892-2
	Displacement/Deformation	
Fatigue tests (e.g. rotational bending, alternating bending, tensile-compressive)	Load	ASTM E466 DIN EN 6072 ISO 12106 DIN EN ISO 7438 DIN EN 2002-6 DIN 50100
	Displacement/Deformation	
	Torsional moment	
High dynamic load (Impact or Crash tests)	Acceleration	AITM 1-0010 ASTM E208
	Time	

Test type	Measurand/test parameter	Characteristic test methods
Creep test	Load	DIN EN 2002-05 ASTM F519 DIN EN ISO 204
	Displacement/Deformation	
Hardness Brinnel (HB)	Hardness	ASTM E10 DIN EN ISO 6506-1 DIN EN 2002-7
Hardness Rockwell-C (HRC)	Hardness	ASTM E18 DIN EN ISO 6508-1 DIN EN 2002-7
Hardness Vickers (HV)	Hardness	DIN EN ISO 6507-1 ASTM E384 ASTM E92 DIN EN 2002-7
Hardness Knoop (HK)	Hardness	ASTM E92 ASTM E384 DIN EM ISO 4545-1
Hardness (UCI)	Hardness	ASTM A1038 DIN 50159-1
Notch impact bending test	Impact Energy	ISO 148-1 ASTM E23 DIN 50115
Cyclic crack grow	Voltage	ASTM E647 DIN EN 3873 AITM 1-0042
	Displacement/Crack length	
Fracture toughness	Load	ASTM E399 ASTM E561 DIN EN ISO 15653 AITM 1-0043
	Displacement/Crack length	
Temperature/ environmental effect	Temperature	DIN EN 2002-2 ASTM G47
	Aqueous solutions	DIN EN ISO 7539-6
Screw connections: - Secrurity performance - Torque Preload force	Preload force	DIN 25201-4 DIN 65151 DIN EN ISO 16047
	Tightening torque	
	Shear Load	
	Lateral movement	

Characteristic test methods, belonging to the above-mentioned test types

ASTM A1038 2019	Standard Test Method for Portable Hardness Testing by the Ultrasonic Contact Impedance Method
ASTM B557 2015	Standard Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products
ASTM B645 2010	Standard Practice for Linear-Elastic Plane – Strain Fracture Toughness Testing of Aluminum Alloys
ASTM B769 2011	Standard Test Method for Shear Testing of Aluminum Alloys
ASTM B831 2019	Standard Test Method for Shear Testing of Thin Aluminum Alloy Products
ASTM E10 2018	Standard Test Method for Brinell Hardness of Metallic Materials
ASTM E111 2017	Standard Test Method for Young's Modulus, Tangent Modulus, and Chord Modulus
ASTM E18 2020	Standard Test Methods for Rockwell Hardness of Metallic Materials
ASTM E1820 2020	Standard Test Method for Measurement of Fracture Toughness
ASTM E208 2020	Standard Test Method for Conducting Drop-Weight Test to Determine Nil-Ductility Transition Temperature of Ferritic Steels
ASTM E23 2018	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials
ASTM E238 2017	Standard Test Method for Pin-Type Bearing Test of Metallic Materials
ASTM E384 2017	Standard Test Method for Microindentation Hardness of Materials

ASTM E399 2020	Standard Test Method for Linear-Elastic Plane-Strain Fracture Toughness of Metallic Materials
ASTM E466 2021	Standard Practice for Conducting Force Controlled Constant AmplitudeAxial Fatigue Tests of Metallic Materials
ASTM E561 2020	Standard Test Method for KR Curve Determination
ASTM E647 2015	Standard Test Method for Measurement of Fatigue Crack Growth Rates
ASTM E8 2021	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E9 2019	Standard Test Methods of Compression Testing of Metallic Materials at Room Temperature
ASTM E92 2017	Standard Test Methods for Vickers Hardness and Knoop Hardness of Metallic Materials
ASTM F519 2018	Standard Test Method for Mechanical Hydrogen Embrittlement Evaluation of Plating/Coating Processes and Service Environments
DIN 25201-4 2004-06	Design guide for railway vehicles and their components – Bolted joints – Part 4: Securing of bolted joints
DIN 50100 2016-12	Load controlled fatigue testing – Execution and evaluation of cyclic tests at constant load amplitudes on metallic specimens and components
DIN 50106 2016-11	Testing of metallic materials – Compression test at room temperature
DIN 50113 2018-12	Testing of metallic materials – Rotating bar bending fatigue test

DIN 50159-1 2015-01	Metallic materials – Hardness testing with the UCI method – Part 1: Test method
DIN 50190-3 1979-03	Hardness depth of heat-treated parts; determination of the effective depth of hardening after nitriding
DIN 65151 2002-08	Aerospace series – Dynamic testing of the locking characteristics of fasteners under transverse loading conditions (vibration test)
DIN EN 10328 2005-04	Iron and steel – Determination of the conventional depth of hardening after surface heating
DIN EN 16843 2019-12	Railway applications – Infrastructure – Mechanical requirements for joints in running rails
DIN EN 2002-001 2006-11	Aerospace series - Metallic materials – Test methods – Part 1: Tensile testing at ambient temperature
DIN EN 2002-002 2006-11	Aerospace series – Metallic materials – Test methods – Part 2: Tensile testing at elevated temperature
DIN EN 2002-005 2008-09	Aerospace series – Test methods for metallic materials – Part 005: Uninterrupted creep and stress-rupture testing
DIN EN 2002-7 1999-05	Aerospace series – Metallic materials; test methods – Part 7: Hardness test
DIN EN 3873 2011-11	Aerospace series – Test methods for metallic materials – Determination of fatigue crack growth rates using Corner-Cracked (CC) test pieces
DIN EN 6072 2011-06	Aerospace series – Metallic materials – Test methods – Constant amplitude fatigue testing
DIN EN ISO 1463 2004-08	Metallic and oxide coatings – Measurement of coating thickness – Microscopical method

DIN EN ISO 15653 2018-06	Metallic materials – Method of test for the determination of quasistatic fracture toughness of welds
DIN EN ISO 16047 2013-01	Fasteners – Torque/clamp force testing
DIN EN ISO 204 2019-04	Metallic materials – Uniaxial creep testing in tension – Method of test
DIN EN ISO 2639 2003-04	Steels – Determination and verification of the depth of carburized and hardened cases
DIN EN ISO 4516 2002-10	Metallic and other inorganic coatings – Vickers and Knoop microhardness tests
DIN EN ISO 4545-1 2019-09	Metallic materials – Knoop hardness test – Part 1: Test method
DIN EN ISO 6506-1 2015-02	Metallic materials – Brinell hardness test – Part 1: Test method
DIN EN ISO 6507-1 2018-07	Metallic materials – Vickers hardness test – Part 1: Test method
DIN EN ISO 6508-1 2016-12	Metallic materials – Rockwell hardness test – Part 1: Test method
DIN EN ISO 6892-1 2020-06	Metallic materials – Tensile testing – Part 1: Method of test at room temperature
DIN EN ISO 6892-2 2018-09	Metallic materials – Tensile testing – Part 2: Method of test at elevated temperature
DIN EN ISO 6892-3 2015-07	Metallic materials – Tensile testing – Part 3: Method of test at low temperature
DIN EN ISO 7438 2021-03	Metallic materials – Bend test

DIN EN ISO 7539-6 2018-12	Corrosion of metals and alloys – Stress corrosion testing – Part 6: Preparation and use of precracked specimens for tests under constant load or constant displacement
DIN EN ISO 9015-2 2016-10	Destructive tests on welds in metallic materials – Hardness testing – Part 2: Microhardness testing of welded joints
DIN ISO 4506 2018-07	Hardmetals – Compression test
DIN ISO 5832-1 2019-12	Implants for surgery – Metallic materials – Part 1: Wrought stainless steel
DIN ISO 614 2015-12	Ships and marine technology – Toughened safety glass panes for rectangular windows and side scuttles – Punch method of non-destructive strength testing
DIN EN 13981-1 2003-11	Aluminium and aluminium alloys – Products for structural railway applications; Technical conditions for inspection and delivery – Part 1: Extruded products
ISO 1099 2017-06	Metallic materials – Fatigue testing – Axial force-controlled method
ISO 12106 2017-03	Metallic materials – Fatigue testing – Axial-strain-controlled method
ISO 12107 2012-08	Metallic materials – Fatigue testing – Statistical planning and analysis of data
ISO 12108 2018-07	Metallic materials – Fatigue testing – Fatigue crack growth method
ISO 148-1 2016-10	Metallic materials – Charpy pendulum impact test – Part 1: Test method
ISO 18203 2016-12	Steel – Determination of the thickness of surface-hardened layers

NASM 1312-4 2018-11	Fastener Test Methods – Method 4: Lap Joint Shear
NASM 1312-8 2011-08	Fastener Test Methods – Method 8: Tensile Strength
AITM 1-0042 2001-06	Determination of Fatigue Crack Growth Rates for Aluminium Clad Sheet and Clad Plate up to 12 mm in Constant-Load-Amplitude Test – K – Increasing Method
AITM 1-0043 2001-06	Determination of Crack Resistance Curve (R-Curve) for Aluminium Clad Sheet and Clad Plate up to 12 mm for M(T) Specimens

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

4.1 mechanical-technological and physical tests on polymer materials and derived products [Flex C]

Test type	Measurand/test parameter	Characteristic test methods
Tensile Bend Compressive Shear for static, quasi-static and dynamic loading sequence	Load	DIN EN ISO 527-1…5
	Deformation	DIN EN ISO 178 DIN EN ISO 14125
	Expansion (DMS)	DIN EN ISO 604 DIN EN ISO 14126
	Temperature	DIN EN ISO 14129 DIN EN ISO 14130 ASTM D7078/D7078M
	Time	ASTM D3479
Peeling test	Load	DIN EN 2243-3 DIN EN ISO 11339
	Deformation	
Energy release rate	Load	ISO 15024 ASTM D5528 AITM 1-0005
	Crack growth	
Long term tensile test Long term flexural test	Load	DIN EN ISO 899-1 DIN EN ISO 899-2
	Deformation	
	Time	
	Temperature	

Test type	Measurand/test parameter	Characteristic test methods
Conditioning Water absorption Aging Warm storage	Mass	DIN EN ISO 62 DIN EN 2378 ASTM D5229/D5229M E DIN EN 3615 DIN EN ISO 1110 DIN EN ISO 175
	Temperature	
	Time	
	Humidity	
Density determination	Mass	DIN EN ISO 1183-1 DIN EN ISO 845
Fibre content, filler content	Mass-based on calcination method / wet mixing washing	DIN EN ISO 1172 DIN EN 2564
Screw removal test Bolt load capacity	Load	DIN EN 14509 AITM 1-0009 AITM 1-0065
	Deformation	
DMA	Temperature	DIN EN ISO 6721 AITM 1-0003 ASTM D7028
	Deformation	
DSC, OIT	Temperature	DIN EN ISO 11357-2 DIN EN ISO 11357-3 DIN EN ISO 11357-6 AITM 3-0002
Impact test	Energy	AITM 1-0010 ISO 18352
	Penetration depth	
	Drop height	

4.2 hardness testing, conditioning, viscosity and dilatometry on polymer materials and derived products [Flex B]

Test type	Measurand/test parameter	Characteristic test methods
Hardness Barcol	Hardness	DIN EN 59
Hardness Shore	Hardness	DIN EN ISO 868
Viscosity	Torsion moment	DIN 53019-1 DIN 53019-2 DIN 53019-3 DIN EN ISO 2555
Conditioning Standard climate	Temperature	DIN EN ISO 291 DIN EN 2743
	Humidity	
Dilatometrie	Deformation	ISO 11359-2 ASTM E831

Characteristic test methods, belonging to the above-mentioned test types

ASD-STAN prEN 6060 1995-12	Fibre reinforced plastics – Test method – Determination of the tensile single lap shear strength
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	Fibre reinforced plastics – Determination of the conditions of exposure to humid atmosphere and of moisture absorption
ASTM C271 2016	Standard Test Method for Density of Sandwich Core Materials
ASTM C273/C273M 2020	Standard Test Method for Shear Properties of Sandwich Core Materials
ASTM C297/C297M 2016	Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
ASTM C364 2016	Standard Test Method for Edgewise Compressive Strength of Sandwich Constructions

ASTM C365 2016	Standard Test Method for Flatwise Compressive Properties of Sandwich Cores
ASTM C393/C393M 2011	Standard Test Method for Core Shear Properties of Sandwich Constructions by Beam Flexure
ASTM D1621 2016	Standard Test Method for Compressive Properties of Rigid Cellular Plastics
ASTM D1623 2017	Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
ASTM D1781 2012	Standard Test Method for Climbing Drum Peel for Adhesives
ASTM D2240 2015	Standard Test Method for Rubber Property-Durometer Hardness
ASTM D2343 2017	Standard Test Method for Tensile Properties of Glass Fiber Strands, Yarns, and Rovings Used in Reinforced Plastics
ASTM D2344 2016	Standard Test Method for Short-Beam Strength of Polymer Matrix Composite Materials and Their Laminates
ASTM D2583 2013	Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
ASTM D2584 2018	Standard Test Method for Ignition Loss of Cured Reinforced Resins
ASTM D2734 2016	Standard Test Methods for Void Content of Reinforced Plastics
ASTM D2990-09 2017	Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
ASTM D3039/D3039M 2017	Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials

ASTM D3167 2010	Standard Test Method for Floating Roller Peel Resistance of Adhesives
ASTM D3171 2015	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 D3479 2019	Standard Test Method for Tension-Tension Fatigue of Polymer Matrix Composite Materials
ASTM D3528 2016	Standard Test Method for Strength Properties of Double Lap Shear Adhesive Joints by Tension Loading
ASTM D3529 2016	Standard Test Method for Matrix Solids Content and Matrix Content of Composite Prepreg
ASTM D3846 2008	Standard Test Method for In-Plane Shear Strength of Reinforced Plastics
ASTM D5026 2015	Standard Test Method for Plastics: Dynamic Mechanical Properties: In Tension
ASTM D5528 2013	Standard Test Method for Mode I Interlaminar Fracture Toughness of Unidirectional Fiber-Reinforced Polymer Matrix Composites
ASTM D5229/D5229M 2020	Standard Test Method for Moisture Absorption Properties and Equilibrium Conditioning of Polymer Matrix Composite Materials
ASTM D5687 2020	Standard Guide for Preparation of Flat Composite Panels with Processing Guidelines for Specimen Preparation
ASTM D570 2018	Standard Test Method for Water Absorption of Plastics
ASTM D5766 2011	Standard Test Method for Open-Hole Tensile Strength of Polymer Matrix Composite Laminates

ASTM D5947 2018	Physical Dimensions of Solid Plastic Specimens
ASTM D618 2013	Standard Practice for Conditioning Plastics for Testing
ASTM D6272 2017	Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials by Four-Point Bending
ASTM D638 2014	Standard Test Method for Tensile Properties of Plastics
ASTM D6484 2020	Standard Test Method for Open-Hole Compressive Strength of Polymer Matrix Composite Laminates
ASTM D6641 2016	Standard Test Method for Compressive Properties of Polymer Matrix Composite Materials Using a Combined Loading Compression (CLC) Test Fixture
ASTM D695 2015	Standard Test Method for Compressive Properties of Rigid Plastics
ASTM D7028 2015	Standard Test Method for Glass Transition Temperature (DMA Tg) of Polymer Matrix Composites by Dynamic Mechanical Analysis (DMA)
ASTM D7078/D7078M 2020	Standard Test Method for Shear Properties of Composite Materials by V-Notched Rail Shear Method
ASTM D7136 2020	Standard Test Method for Measuring the Damage Resistance of a Fiber-Reinforced Polymer Matrix Composite to a Drop-Weight Impact Event
ASTM D7137 2017	Standard Test Method for Compressive Residual Strength Properties of Damaged Polymer Matrix Composite Plates
ASTM D7264/D7264M 2021	Standard Test Method for Flexural Properties of Polymer Matrix Composite Materials

ASTM D790 2017	Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D7905 2019	Standard Test Method for Determination of the Mode II Interlaminar Fracture Toughness of Unidirectional Fiber-Reinforced Polymer Matrix Composites
ASTM D792 2020	Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM E1356 2008 (2014)	Standard Test Method for Assignment of the Glass Transition Temperatures by Differential Scanning Calorimetry
ASTM E 1640 2018	Standard Test Method for Assignment of the Glass Transition Temperature By Dynamic Mechanical Analysis
ASTM E2004 2018	Standard Test Method for Facing Cleavage of Sandwich Panels
ASTM E831 2019	Standard Test Method for Linear Thermal Expansion of Solid Materials by Thermomechanical Analysis
DIN 16495 1989-03	Packaging – Transport packaging for dangerous goods – Test methods
DIN 18807-9 1998-06	Trapezoidal sheeting in buildings – Part 9: Aluminium trapezoidal sheeting and their connections; application and construction
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 53255 2017-08	Testing of wood adhesives and glued wood joints – Mechanical delamination tests by grooving and chopping
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 53398 1975-09	Testing of textile glass reinforced plastics; bending pulsating test
DIN 53752 1980-12	Testing of plastics; determination of the coefficient of linear thermal expansion
DIN 65148 1986-11	Aerospace; testing of fibre-reinforced plastics; determination of interlaminar shear strength by tenside 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
DIN 65383 1997-10	Aerospace – Thermosetting epoxy woven glass filament fabric preimpregnated for structural applications – Technical specification

DIN 65562 1991-05	Aerospace; fibre reinforced plastics; testing of multidirectional laminates; determination of bearing strength
DIN EN 1090-4 2020-06	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 2020-06	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 13706-1 2003-02	Reinforced plastic composites – Specification for pultruded profiles – Part 1: Designation
DIN EN 13706-2 2003-02	Reinforced plastic composites – Specifications for pultruded profiles – Part 2: Methods of test and general requirements
DIN EN 13706-3 2003-02	Reinforced plastic composites – Specifications for pultruded profiles – Part 3: Specific requirements
DIN EN 14509 2013-12	Self-supporting double skin metal faced insulating panels – Factory made products – Specifications
DIN EN 1464 2010-06	Adhesives – Determination of peel resistance of adhesive bonds – Floating roller method
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
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 – Determmination of the resin flow
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 strengt
DIN EN 2564 2019-08	Aerospace series – Carbon fibre laminates – Determination of the fibre, resin and void contents
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	Aerospace series – Fibre reinforced plastics – Test method – Determination of in-plane shear properties (± 45° tensile test)

DIN EN 6032 2016-02	Aerospace series – Fibre reinforced plastics – Test method – Determination of the glass transition temperatures
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 6038 2016-02	Aerospace series – Fibre reinforced plastics – Test method – Determination of the compression strength after impact
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 2019-09	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 2020-08	Plastics – Differential scanning calorimetry (DSC) – Part 2: Determination of glass transition temperature and step height
DIN EN ISO 11357-3 2018-07	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 2018-07	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 2019-09	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 reponse, including the in-plane schear modulus and strength, by ± 45° 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 1998-10	Plastics – Liquid resins – Determination of density by the pyknometer method
DIN EN ISO 175 2011-03	Plastics – Methods of test for the determination of the effects of immersion in liquid chemicals
DIN EN ISO 178 2019-08	Plastics – Determination of flexural properties
DIN EN ISO 1889 2009-10	Reinforcement yarns – Determination of linear density
DIN EN ISO 1923 1995-06	Cellular plastics and rubbers – Determination of linear dimensions
DIN EN ISO 2578 1998-10	Plastics – Determination of time-temperature limits after prolonged exposure to heat
DIN EN ISO 2818 2019-04	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 2019-12	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 6721-1 2019-09	Plastics – Determination of dynamic mechanical properties – Part 1: General principles
DIN EN ISO 844 2014-11	Rigid cellular plastics – Determination of compression properties
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 2020-06	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	Carbon-fibre-reinforced plastics – Determination of compression-after-impact properties at a specified impact-energy level
ISO 1922 2018-09	Rigid cellular plastics – Determination of shear strength
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 4578 1997-07	Adhesives – Determination of peel resistance of high-strength adhesive bonds – Floating-roller method
ISO 4587 2003-03	Adhesives – Determination of tensile lap-shear strength of rigid-to-rigid bonded assemblies
ISO 6721-5 2019-04	Plastics – Determination of dynamic mechanical properties – Part 5: Flexural vibration - Non-resonance method

AITM 1-0002 1998-11	AITM Airbus Test Method – Fibre Reinforced Plastics Determination of in-plain shear properties (±45 ° tensile test)
AITM 1-0003 2018-08	Determination of the glass transition temperatures
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 1-0065 2014-01	Fiber reinforced plastics Determination of joint strength of mechanically fastend joints
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
PR 526 2013-12	Tensile test on 45° laminates to determine the stress/shear deformation curve of the shear modulus in the laminate plane to DIN EN ISO 14129
PR 528 2016-04	Specimen manufacturing of composites for the determination of mechanical parameters and quality control
PR 544 2013-09	Determination of the bending properties of composite materials using the three and four-point bending method
PR 545 2013-12	Tensile test on unidirectionally reinforced laminates parallel to the fiber direction
PR 546 2013-12	Tensile test on unidirectionally reinforced laminates perpendicular to the fiber direction
DNVGL-CP-0431 2015-12	Prepeg materials – Non-metallic materials
SACMA 1R-94 1994	Compressive Properties of Oriented Fiber-Resin Composites
SACMA 18R-94 1994	Glass Transition Temperature (Tg) Determination of oriented fiber-resin Composites

5 Mechanical-technological, analytical and physical tests on pipe systems and their components and materials [Flex C] (D1, D2)

Test type	Measurand/test parameter	Characteristic test methods
Internal pressure resistance	Pressure Temperature	DIN EN ISO 1167 DIN EN 1447 API 15S
Thermal cycling test	Pressure Temperature Flow rate	DVGW W 534 DIN EN ISO 19892 SKZ HR 3.39
Pressure cycling	Pressure	DVGW W 534 DIN EN ISO 19892 API 15S
Vibration resistance	Pressure	DVGW W 534
Vacuum test	Pressure	DVGW W 534 DIN EN ISO 13056 DIN EN ISO 3459 API 15S
Bending fatigue strength	Pressure	DVGW W 534
Bending resistance	Pressure	DVGW W 534 DIN EN ISO 3503
Forced leakage	Pressure	DVGW W 534
Flow resistance	Pressure differential - static - dynamic Flow rate	DVGW W 575 DIN EN 1267
Long term tensile test Shear strengthLangzeit- Long term bend test Tensile strength	Load Displacement Time Temperature	DIN EN ISO 899-1 DIN EN ISO 899-2 DIN EN ISO 6259-1 DIN EN ISO 6259-2 DIN EN ISO 6259-3 ISO 8513 ISO 8521 DVS 2203-4
Resistance to pull-out	Load Temperature	DIN EN ISO 3501 DVS 2203-1
Stress cracking test	Displacement	DIN EN ISO 13479 ISO 13480 DVS 2203-4

Test type	Measurand/test parameter	Characteristic test methods
Long term ring rigidity (Ring stiffness)	Displacement	DIN EN ISO 9967 DIN EN ISO 9969 ISO 7685 ISO 10466 SKZ HR 3.39
Warm storage / Aging	Temperature	DIN EN ISO 21003-2 DIN EN ISO 2578 API 15S
Falling weight test	Mass Displacement	DIN EN ISO 3127 DIN EN ISO 11173
Impact test Notch impact test	Impact energy	DIN EN ISO 179-1 API 17J
Thermal conductivity	Temperature	DIN EN 253 API 17J DIN EN 12667
	electrical power	
Emission measurement (Determination of volatile organic hydrocarbon compounds)	Concentration	BMW GS 97014 Porsche PPV 4050 Porsche PPV 4051
Leak test	Concentration	BMW GS 97014 Porsche PPV 4050 Porsche PPV 4051
	Druck	
Cell structure, Open cellular structure	Volume	DIN EN 253
Longitudinal reversion (shrinkage)	Temperature	DIN EN ISO 2505 SKZ HR 3.12
Melt mass flow rate	MFR	DIN EN ISO 1133-1 DIN EN ISO 1133-2 SKZ HR 3.12
Degree of cross linking	Degree of cross linking	DIN EN ISO 10147 SKZ HR 3.2

Characteristic test methods, belonging to the above-mentioned test types

API 15S 2019-10	Spoolable Reinforced Plastic Line Pipe
API 17J 2017-10	Specification for Unbonded Flexible Pipe

ASTM D1598 2015-12	Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
ASTM D1599 2018-11	Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing and Fitting
ASTM D2105 2019-12	Standard Test Method for Longitudinal Tensile Properties of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Tube
ASTM D2143 2015-05	Standard Test Method for Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe
ASTM D2290 2019-09	Standard Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe
ASTM D2412 2021-02	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
ASTM D2837 2021-02	Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products
ASTM D2924 2017-09	Standard Test Method for External Pressure Resistance of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
ASTM D2992 2018-06	Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings
ASTM D3262 2020-03	Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe
ASTM D3517 2019-08	Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pressure Pipe
ASTM D3681 2018-08	Standard Test Method for Chemical Resistance of "Fiberglass" (Glass – Fiber – Reinforced Thermosetting-Resin) Pipe in a Deflected Condition
ASTM D3754 2019-12	Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer and Industrial Pressure Pipe
ASTM D5365 2018-08	Standard Test Method for Long-Term Ring-Bending Strain of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe

ASTM F2262 2019-12	Standard Specification for Crosslinked Polyethylene/Aluminum/ Crosslinked Polyethylene Tubing OD Controlled SDR9
ASTM F876 2021-01	Standard Specification for Crosslinked Polyethylene (PEX) Tubing
ASTM F877 2020-02	Standard Specification for Crosslinked Polyethylene (PEX) Hot- and Cold-Water Distribution Systems
DBS 918 064 2013-12	Plastic pipes and plastic manholes for draining railway systems
DIN 3227 2008-04	Valves for potable water supply in buildings – Angle service valves - Requirements and test
DIN 3266 2018-03	Valves for drinking water installations on private premises - Anti-vacuum valves, types D and E
DIN 3387-1 2008-11	Separable unthreaded pipe connections for metal gas pipes – Part 1: Connections for pipes with smooth ends
DIN 3509 2010-06	Valves for potable water supply in buildings – Draw-off taps (PN 10) – Requirements and tests
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
DIN 4721 2014-12	Aerospace series – Steel X4CrNiMo16-5-1 (1.4418) – Air melted and electroslag remelted (ESR) – Hardened and tempered – Bar – De ≤ 200 mm – 900 MPa ≤ Rm ≤ 1050 MPa

DIN 4724 2020-11	Plastic piping systems for warm water floor heating systems and radiator pipe connecting – Crosslinked polyethylene of medium density (PE-MDX)
DIN 4726 2017-10	Warm water surface heating systems and radiator connecting systems – Plastics piping systems and multilayer piping systems
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
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 16838 2010-12	Thermoplastics materials for fittings – Polyphenylene sulfone (PPSU) – General quality requirements and testing
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 16842 2013-05	Polyethylene (PE) pipes – PE-HD for pressureless applications – General quality requirements, dimensions and testing
DIN 16868-1 2016-10	Glass fibre reinforced unsaturated polyester resin (UP-GF) pipes – Part 1: Wound, filled, dimensions
DIN 16868-2 2016-10	Glass fibre reinforced unsaturated polyester resin (UP-GF) pipes – Part 2: Wound, filled, general quality requirements, testing
DIN 16869-1 2014-12	Centrifugally cast filled glass fibre reinforced unsaturated polyester resin (UP-GF) pipes – Part 1: Dimensions

DIN 16869-2 2014-12	Centrifugally cast filled glass fibre reinforced unsaturated polyester resin (UP-GF) pipes – Part 2: General quality requirements, testing
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
DIN 16887 1990-07	Determination of the long-term hydrostatic pressure resistance of thermoplastics pipes
DIN 16892 2019-10	Crosslinked polyethylene (PE-X) pipes – General quality requirements, testing; Text in German and English
DIN 16893 2019-10	Crosslinked polyethylene (PE-X) pipes – Dimensions
DIN 16894 2011-04	Pipes of crosslinked medium density polyethylene (PE-MDX) – General quality requirements and testing
DIN 16961-1 2018-08	Thermoplastics pipes and fittings with profiled wall and smooth pipe inside – Part 1: Classification and dimensions
DIN 16961-2 2018-08	Thermoplastics pipes and fittings with profiled wall and smooth pipe inside – Part 2: Technical delivery specifications
DIN 16966-1 1988-11	Glass fibre reinforced polyester resin (UP-GF) pipe fittings and joint assemblies; fittings; general quality requirements and testing
DIN 16966-2 1982-07	Glass fibre reinforced polyester resin (UP-GF) pipe fittings and joints; Elbows, Dimensions
DIN 16966-4 1982-07	Glass fibre reinforced polyester resin (UP-GF) pipe fittings an joints; Tees, Nozzles, Dimensions
DIN 16966-5 1982-07	Glass fibre reinforced polyester resin (UP-GF) pipe fittings and joints; Reducers, Dimensions
DIN 16966-6 1982-07	Glass fibre reinforced polyester resin (UP-GF) pipe fittings and joint assemblies; collars, flanges, joint rings, dimensions

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
DIN 16966-8 1982-07	Glass fibre reinforced polyester resin (UP-GF) pipe fittings and joints; Laminated joints; Dimensions
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
DIN 19537-3 1990-11	Prefabricated high density polyethylene (PE-HD) manholes for use in sewerage systems; dimensions and technical delivery conditions
DIN 19628 2007-07	Mechanical filters for drinking water installations – Application of mechanical filters according to DIN EN 13443-1
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
DIN 53769-1 1988-11	Testing of glass fibre reinforced plastics pipes; determination of the longitudinal shear strength of type B pipe fittings
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 2020-03	District heating pipes – Bonded single pipe systems for directly buried hot water networks – Factory made pipe assembly of steel service pipe, polyurethane thermal insulation and a casing of polyethylene
DIN EN 448 2020-03	District heating pipes – Bonded single pipe systems for directly buried hot water networks – Factory made fitting assemblies of steel service pipes, polyurethane thermal insulation and a casing of polyethylene
DIN EN 476 2011-04	General requirements for components used in drains and sewers

DIN EN 488 2020-03	District heating pipes – Bonded single pipe systems for directly buried hot water networks – Factory made steel valve assembly for steel service pipes, polyurethane thermal insulation and a casing of polyethylene
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
DIN EN 489-1 2020-03	District heating pipes – Bonded single and twin pipe systems for buried hot water networks – Part 1: Joint casing assemblies and thermal insulation for hot water networks in accordance with EN 13941-1
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
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 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 1111 2017-10	Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specification;
DIN EN 1112 2008-06	Sanitary tapware – Shower outlets for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification

DIN EN 1113 2015-06	Sanitary tapware – Shower hoses for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification
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 1213 1999-12	Building valves – Copper alloy stopvalves for potable water supply in buildings – Tests and requirements
DIN EN 1228 1996-08	Plastics piping systems – Glass-reinforced thermosetting plastics (GRP) pipes – Determination of initial specific ring stiffness
DIN EN 1254-1 2021-10	Copper and copper alloys – Plumbing fittings – Part 1: Capillary fittings for soldering or brazing to copper tubes
DIN EN 1254-2 2021-10	Copper and copper alloys – Plumbing fittings – Part 2: Compression fittings for use with copper tubes
DIN EN 1254-3 2021-07	Copper and copper alloys – Plumbing fittings – Part 3: Compression fittings for use with plastics and multilayer pipes
DIN EN 1254-4 2021-10	Copper and copper alloys – Plumbing fittings – Part 4: Threaded fittings
DIN EN 1254-5 2021-10	Copper and copper alloys – Plumbing fittings – Part 5: Capillary fittings with short ends for brazing to copper tubes
DIN EN 1254-6 2021-10	Copper and copper alloys – Plumbing fittings – Part 6: Push-fit fittings for use with metallic tubes, plastics and multilayer pipes
DIN EN 1254-7 2021-10	Copper and copper alloys – Plumbing fittings – Part 7: Press fittings for use with metallic tubes
DIN EN 1254-8 2021-10	Copper and copper alloys – Plumbing fittings – Part 8: Press fittings for use with plastics and multilayer pipes
DIN EN 1254-20 2021-10	Copper and copper alloys – Plumbing fittings – Part 20: Definitions, thread dimensions, test methods, reference data and supporting information

DIN EN 1267 2012-04	Industrial valves – Test of flow resistance using water as test fluid
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
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 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
DIN EN 1447 2011-01	Plastics piping systems – Glass-reinforced thermosetting plastics (GRP) pipes – Determination of long-term resistance to internal pressure
DIN EN 1451-1 2018-10	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure – Polypropylene (PP) – Part 1: Specifications for pipes, fittings and the system
DIN EN 1488 2000-06	Building valves – Expansion groups – Tests and requirements;
DIN EN 1491 2000-06	Building valves – Expansions valves – Tests and requirements
DIN EN 1555-1 2010-12	Plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Part 1: General
DIN EN 1555-2 2010-12	Plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Part 2: Pipes
DIN EN 1555-3 2013-01	Plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Part 3: Fittings

DIN EN 1555-4 2011-11	Plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Part 4: Valves
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
DIN EN 1519-1 2019-07	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure – Polyethylene (PE) – Part 1: Requirements for pipes, fittings and the system
DIN EN 1567 2000-01	Building valves – Water pressure reducing valves and combination water pressure reducing valves – Requirements and tests
DIN EN 1717 2011-08	Protection against pollution of potable water installations and general requirements of devices to prevent pollution by backflow
DIN EN 1716 1997-03	Plastics piping systems – Polyethylene (PE) tapping tees – Test method for impact resistance of an asssembled tapping tee
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)
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
DIN EN 1286 1999-06	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 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 12201-1 2011-11	Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) – Part 1: General

DIN EN 12201-2 2013-12	Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) – Part 2: Pipes
DIN EN 12201-3 2013-01	Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) – Part 3: Fittings
DIN EN 12201-4 2012-04	Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) – Part 4: Valves
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
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 12566-3 2016-12	Small wastewater treatment systems for up to 50 PT – Part 3: Packaged and/or site assembled domestic wastewater treatment plants
DIN EN 12666-1 2011-11	Plastics piping systems for non-pressure underground drainage and sewerage – Polyethylene (PE) – Part 1: Specifications for pipes, fittings and the system
DIN CEN/TS 12666-2 2021-11	Plastics piping systems for non-pressure underground drainage and sewerage – Polyethylene (PE) – Part 2: Guidance for the assessment of conformity
DIN EN 12667 2001-05	Thermal performance of building materials and products – Determination of thermal resistance by means of guarded hot plate and heat flow meter methods – Products of high and medium thermal resistance
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
DIN EN 13076 2004-05	Devices to prevent pollution by backflow of potable water – Unrestricted air gap – Family A – Type A

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
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
DIN EN 13079 2003-12	Devices to prevent pollution by backflow of potable water – Air gap with injector – Family A; Type D
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
DIN EN 13476-2 2020-12	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
DIN EN 13476-3 2020-12	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
DIN CEN/TS 13476-4 2020-08	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: Assessment of conformity

DIN EN 13618 2017-03	Flexible hose assemblies in drinking water installations – Functional requirements and test methods
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 13941-1 2019-12	District heating pipes – Design and installation of thermal insulated bonded single and twin pipe systems for directly buried hot water networks – Part 1: Design
DIN EN 13959 2005-01	Anti-pollution check valves – DN 6 to DN 250 inclusive – Family E, type A, B, C and D
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
DIN EN 14367 2005-10	Non controllable backflow preventer with different pressure zones – Family C, type A
DIN EN 14451 2020-10	Devices to prevent pollution by backflow of potable water – In-line anti-vacuum valves DN 10 to DN 50 inclusive – Family D, type A
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
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
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
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
DIN EN 14506 2005-08	Devices to prevent pollution by backflow of potable water – Automatic diverter – Family H, type C

DIN EN 14622 2005-08	Devices to prevent pollution by backflow of potable water – Air gap with circular overflow (restricted) – Family A, type F
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
DIN EN 14652 2007-09	Water conditioning equipment inside buildings – Membrane separation devices – Requirements for performance, safety and testing
DIN EN 14743 2007-09	Water conditioning equipment inside buildings – Softeners – Requirements for performance, safety and testing
DIN EN 14898 2007-09	Water conditioning equipment inside buildings – Active media filters – Requirements for performance, safety and testing
DIN EN 15092 2008-09	Building valves – Inline hot water supply tempering valves – Tests and requirements
DIN EN 15096 2020-10	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
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 15698-1 2020-04	District heating pipes – Bonded twin pipe systems for directly buried hot water networks – Part 1: Factory made twin pipe assembly of steel service pipes, polyurethane thermal insulation and one casing of polyethylene
DIN EN 15698-2 2020-04	District heating pipes – Bonded twin pipe systems for directly buried hot water networks – Part 2: Factory made fitting and valve assemblies of steel service pipes, polyurethane thermal insulation and one casing of polyethylene
DIN EN 60730-2-8 2020-12	Automatic electrical controls for household and similar use – Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements
DIN EN 61770 2019-12	Electric appliances connected to the water mains – Avoidance of backsiphonage and failure of hose-sets
DIN EN ISO 179-1 2010-11	Plastics – Determination of Charpy impact properties – Part 1: Non-instrumented impact test
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 1133-1 2012-03	Plastics – Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics – Part 1: Standard method
DIN EN ISO 1133-2 2012-03	Plastics – Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics – Part 2: Method for materials sensitive to time-temperature history and/or moisture
DIN EN ISO 1167-1 2006-05	Thermoplastics pipes, fittings and assemblies for the conveyance of fluids – Determination of the resistance to internal pressure – Part 1: General method
DIN EN ISO 1167-2 2006-05	Thermoplastics pipes, fittings and assemblies for the conveyance of fluids – Determination of the resistance to internal pressure – Part 2: Preparation of pipe test pieces

DIN EN ISO 1167-3 2008-02	Thermoplastics pipes, fittings and assemblies for the conveyance of fluids – Determination of the resistance to internal pressure – Part 3: Preparation of components
DIN EN ISO 1167-4 2008-02	Thermoplastics pipes, fittings and assemblies for the conveyance of fluids – Determination of the resistance to internal pressure – Part 4: Preparation of assemblies
DIN EN ISO 1172 1998-12	Textile-glass-reinforced plastics – Prepregs, moulding compounds and laminates – Determination of the textile-glass and mineral-filler content
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
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
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
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
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
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 3126 2005-05	Plastics piping systems – Plastics components – Determination of dimensions
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 3459 2015-06	Plastic piping systems – Mechanical joints between fittings and pressure pipes – Test method for leaktightness under negative 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	Thermoplastics pipes – Determination of tensile properties – Part 1: General test method
DIN EN ISO 6259-2 2021-01	Thermoplastics pipes – Determination of tensile properties – Part 2: Pipes made of unplasticized poly(vinyl chloride) (PVC-U), oriented unplasticized poly(vinyl chloride (PVC-O), chlorinated poly (vinyl chloride) (PVC-C) and high-impact poly (vinyl chloride) (PVC-HI)
DIN EN ISO 6259-3 2015-11	Thermoplastics pipes – Determination of tensile properties – Part 3: Polyolefin pipes
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
DIN EN ISO 10147 2013-03	Pipes and fittings made of crosslinked polyethylene (PE-X) – Estimation of the degree of crosslinking by determination of the gel content
DIN EN ISO 11173 2018-02	Thermoplastics pipes – Determination of resistance to external blows – Staircase method
DIN EN ISO 11296-1 2018-09	Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks – Part 1: General
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
DIN EN ISO 11297-1 2018-09	Plastics piping systems for renovation of underground drainage and sewerage networks under pressure – Part 1: General
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
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 2020-10	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
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 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 15874-1 2013-06	Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 1: General
DIN EN ISO 15874-2 2018-11	Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 2: Pipes
DIN EN ISO 15874-3 2018-11	Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 3: Fittings
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
DIN EN ISO 15875-1 2004-03	Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 1: General

DIN EN ISO 15875-2 2021-03	Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 2: Pipes
DIN EN ISO 15875-3 2021-03	Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 3: Fittings
DIN EN ISO 15875-5 2021-03	Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 5: Fitness for purpose of the system
DIN EN ISO 15876-1 2017-06	Plastics piping systems for hot and cold water installations – Polybutene (PB) – Part 1: General
DIN EN ISO 15876-2 2021-03	Plastics piping systems for hot and cold water installations – Polybutene (PB) – Part 2: Pipes
DIN EN ISO 15876-3 2020-03	Plastics piping systems for hot and cold water installations – Polybutene (PB) – Part 3: Fittings
DIN EN ISO 15876-5 2017-06	Plastics piping systems for hot and cold water installations – Polybutene (PB) – Part 5: Fitness for purpose of the system
DIN EN ISO 15877-1 2011-03	Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 1: General
DIN EN ISO 15877-2 2021-03	Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 2: Pipes
DIN EN ISO 15877-3 2011-03	Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 3: Fittings
DIN EN ISO 15877-5 2021-03	Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 5: Fitness for purpose of the system
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	lastics 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 21003-1 2008-11	Multilayer piping systems for hot and cold water installations inside buildings – Part 1: General
DIN EN ISO 21003-2 2011-07	Multilayer piping systems for hot and cold water installations inside buildings – Part 2: Pipes
DIN EN ISO 21003-3 2008-11	Multilayer piping systems for hot and cold water installations inside buildings – Part 3: Fittings
DIN EN ISO 21003-5 2008-11	Multilayer piping systems for hot and cold water installations inside buildings – Part 5: Fitness for purpose of the system
DIN EN ISO 22391-1 2010-04	Plastics piping systems for hot and cold water installations – Polyethylene of raised temperature resistance (PE-RT) – Part 1: General
DIN EN ISO 22391-2 2021-03	Plastics piping systems for hot and cold water installations – Polyethylene of raised temperature resistance (PE-RT) – Part 2: Pipes
DIN EN ISO 22391-3 2021-03	Plastics piping systems for hot and cold water installations – Polyethylene of raised temperature resistance (PE-RT) – Part 3: Fittings
DIN EN ISO 22391-5 2021-06	Plastics piping systems for hot and cold water installations – Polyethylene of raised temperature resistance (PE-RT) – Part 5: Fitness for purpose of the system
DVGW VP 624 2005-05	Plastic pipes made of cross-linked polyethylene (PE-X) for drinking water and gas installations – internal gas lines with an operating pressure of less than or equal to 100 m bar
DVGW G 5600-1 2014-02	Material transition connector made of metal for gas pipelines made of polyethylene
DVGW G 5614 2013-12	Permanent pipe connections for metal gas pipes – press connector
DVGW G 5628 2016-09	Installation systems for gas installation, consisting of multi-layer composite pipes and their connectors, with an operating pressure of less than or equal to 100 mbar, requirements and tests

DVGW GW 6 2014-03	Solder, transition and threaded fittings made of copper and copper alloys in gas and drinking water installations – requirements and tests
DVGW GW 327 2011-03	Lining of gas and water pipelines with fabric hoses to be glued in
DVGW GW 335-A1 2003-06	Plastics piping systems in gas and water distribution – Requirements and tests – Part A1: PVC-U pipes and fittings made from them for water distribution
DVGW GW 335-A2 2005-11	Plastics piping systems in gas and water distribution – Requirements and tests – Part A2: Pipes made of PE 80 and PE 100
DVGW GW 335-A2-B1 2010-12	Supplement 1 to DVGW worksheet GW 335-A2:2005-11: Plastic piping 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 piping systems in gas and water distribution – Requirements and tests – Part A 3: Pipes made of PE-Xa
DVGW GW 335-B2 2004-09	Plastics piping systems in gas and water distribution – Requirements and tests – Part B2: Fittings made of PE 80 and PE 100
DVGW GW 335-B3 2011-09	Plastic piping systems in gas and water distribution – Part B3: Mechanical connectors made of plastics (POM, PP) for water distribution
DVGW GW 335-B3-B1 2013-02	Supplement 1 for connectors made of PE 100 to DVGW GW 335-B3:2011-09 Plastic piping systems in gas and water distribution – Part B3: Mechanical connectors made of plastics (POM, PP) for water distribution
DVGW GW 335-B3-B2 2013-04	Supplement 2 for connectors made of PA GF to DVGW GW 335-B3:2011-09 plastic piping systems in gas and water distribution – Part B3: Mechanical connectors made of plastics (POM, PP) for water distribution
DVGW GW 335-B4 2014-04	Plastic piping systems in gas and water distribution – Part B4: Metal fittings with mechanical or push-in joints for water distribution
DVGW GW 336-2 2010-09	Underground fittings – Part 2: Requirements and tests

DVGW GW 541 2004-10	Stainless steel pipes for gas and drinking water installation
DVGW VP 549 2007-06	Hoses for the temporary transport of drinking water
DVGW VP 550 2007-06	Hose fittings for hoses for the temporary transport of drinking water
DVGW VP 615 1996-07	Pressure pipes, fittings and pipe connections made of glass fiber reinforced polyester resin (UP-GF) for drinking water pipes
DVGW VP 640 2003-08	Plastic piping systems in gas and water distribution; Requirements and tests – Pipes made of PE-Xb and PE-Xc
DVGW VP 652 2006-05	Copper pipe with a firmly adhering plastic jacket for the drinking water installation
DVGW W 330 2011-03	Fabric hoses to be glued in for water pipes
DVGW W 363 2010-06	Shut-off fittings, non-return valves, ventilation valves and control fittings made of metal materials for drinking water supply systems - requirements and tests
DVGW W 421 2009-05	Water meters – requirements and tests
DVGW W 534 2015-07	Pipe connectors and pipe connections in the drinking water installation
DVGW W 542 2009-08	Multi-layer composite pipes in the drinking water installation
DVGW W 543 2005-05	Pressure-resistant flexible hose lines for drinking water installations
DVGW W 544 2007-05	Plastic pipes in the drinking water installation
DVGW W 554 2011-03	Regulated circulation valves
DVGW W 570-1 2013-03	Fittings for drinking water installations – Part 1: Requirements and tests for building fittings

DVGW W 570-2 2008-01	Fittings for drinking water installations – Part 2: Requirements and tests for safety fittings
DVGW W 570-3 2013-12	Fittings in drinking water installations – building and safety fittings and/or combinations in special designs for areas of application according to DIN EN 806 and DIN EN 1717 in conjunction with DIN 1988
DVGW W 574 2007-04	Sanitary fittings as extraction fittings for drinking water installations
DVGW W 575 2012-01	Determination of resistance coefficients for fittings and connectors in the drinking water installation
DVGW W 576 2013-08	Thermostatic mixers – requirements and tests
DVGW W 578 2012-02	Combination angle valve with device connection – requirements and tests
DVGW W 579 2015-09	Sampling fittings in the drinking water installation
DVS 2202 2016-08	Evaluation of joints made of thermoplastics on pipe parts and panels – characteristics, description, evaluation
DVS 2203-1 Beiblatt 1 2010-08	Testing of welded joints on panels and pipes made of thermoplastic materials – requirements in the tensile test – short-time tensile welding factor
DVS 2203-1 Beiblatt 2 2014-05	Testing of welded joints on panels and pipes made of thermoplastics – requirements in the tensile test (creep welding factor fs)
DVS 2203-1 Beiblatt 3 2012-06	Testing of welded joints on panels and pipes made of thermoplastic materials – requirements in technological bending tests – bending angle/bending path
DVS 2203-1 2003-01	Testing of welded joints on panels and pipes made of thermoplastics – test methods – requirements
DVS 2203-2 Beiblatt 1 2010-08	Testing of welded joints on panels and pipes made of thermoplastic materials – low-temperature tensile test

DVS 2203-2 2010-08	Testing of welded joints on panels and pipes made of thermoplastic materials – tensile test
DVS 2203-3 2011-04	Testing of welded joints on panels and pipes made of thermoplastics – tensile impact test
DVS 2203-4 Beiblatt 1 2001-12	Testing of welds on panels and pipes made of thermoplastics – creep test – testing of socket welds on pipes
DVS 2203-4 Beiblatt 2 2016-09	Testing of welded joints on panels and pipes made of thermoplastics – creep rupture test – testing of resistance to slow crack growth in the Full Notch Creep Test (FNCT)
DVS 2203-4 Beiblatt 3 2015-03	Testing of welded joints on panels and pipes made of thermoplastics – creep test – checking the required creep welding factor and the minimum service life of welded joints made of polyethylene (PE 80 and PE 100)
DVS 2203-4 1997-07	Testing of welded joints on panels and pipes made of thermoplastic materials – long-term tensile test
DVS 2203-5 1999-08	Testing of welded joints on panels and pipes made of thermoplastic materials – Technological bending test
DVS 2203-6 Beiblatt 1 2016-08	Testing of joints made of polymeric materials – torsional shear and radial peel test for electrofusion and heating element socket welds
DVS 2203-6 Beiblatt 2 2008-01	Testing of joints made of polymer materials – Testing of adhesive joints in shear and peel tests
DVS 2203-6 2008-01	Testing of joints made of polymer materials – shear and peel test
DVS 2207-1 Beiblatt 1 2005-12	Welding of thermoplastics Electrofusion welding of pipes made of PE-X with pipe parts made of PE-HD
DVS 2207-1 2015-08	Welding of thermoplastics Heated element welding of pipes, pipe parts and panels made of PE-HD

DVS 2220 2011-05	Testing of plastic laminators and adhesives, test group II - laminates and laminate and adhesive connections made of GRP (UP-GF and EP-GF)
GMW15803 2015-04	Performance Test for Connections Used in Charge Air Systems
ISO 2591-1 1988-12	Test sieving – Part 1: methods using test sieves of woven wire cloth and perforated metal plate
ISO 4065 2018-01	Thermoplastics pipes – Universal wall thickness table
ISO 4427-2 2019-08	Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) – Part 2: Pipes
ISO 4427-3 2019-08	Plastics piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) – Part 3: Fittings
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 7432 2021-04	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 2015-03	Plastics piping systems – Glass-reinforced thermosetting plastics (GRP) pipes – Determination of time to failure under sustained internal pressure
ISO 7685 2019-07	Glass-reinforced thermosetting plastics (GRP) pipes – Determination of initial ring stiffness
ISO 8483 2019-08	Glass-reinforced thermosetting plastics (GRP) pipes and fittings – Test methods to prove the design of bolted flange joints
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 2020-07	Glass-reinforced thermosetting plastic (GRP) pipes – Test methods for the determination of the initial circumferential tensile wall strength

ISO 8533 2019-08	Glass-reinforced thermosetting plastics (GRP) pipes and fittings – Test methods to prove the design of cemented or wrapped joints
ISO 9276-1 1998-06	Representation of results of particle size analysis – Part 1: Graphical representation
ISO 10952 2021-03	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 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
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
ISO 10508 2006-03 AMD 1:2018-09	Plastics piping systems for hot and cold water installations – Guidance for classification and design; Amendment 1
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
ISO 10928 2016-12	Plastics piping systems – Glass-reinforced thermosetting plastics (GRP) pipes and fittings – Methods for regression analysis and their use
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 13954 1997-12	Plastics pipes and fittings – Peel decohesion test for polyethylene (PE) electrofusion assemblies of nominal outside diameter greater than or equal to 90 mm
ISO 13955 1997-12	Plastics pipes and fittings – Crushing decohesion test for polyethylene (PE) electrofusion assemblies
ISO 13956 2010-10	Plastics pipes and fittings – Decohesion test of polyethylene (PE) saddle fusion joints – Evaluation of ductility of fusion joint interface by tear test
ISO 15306 2003-12	Glass-reinforced thermosetting plastics (GRP) pipes – Determination of the resistance to cyclic internal pressure
ISO 15306 AMD 1 2012-02	Glass-reinforced thermosetting plastics (GRP) pipes – Determination of the resistance to cyclic internal pressure – Amendment 1
ISO 16770 2019-09	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
ISO 17885 2015-09	Plastics piping systems – Mechanical fittings for pressure piping systems – Specifications
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
ISO 23856 2021-06	Plastics piping systems for pressure and non-pressure water supply, drainage or sewerage – Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin

NSF/ANSI 14 2020	Plastics Piping System Components and Related Materials
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)
ÖNORM B 5161 2017-05	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)
ÖVGW QS-G392/1 2015-10	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
ÖVGW QS-G 392/2 2020-11	Gas pipe systems made of polyethylene PE 80, PE 100 and PE 100-RC, Part 2: Pipes, requirements and tests for the award of the ÖVGW quality mark
ÖVGW QS-G 392/3 2019-07	Gas pipe systems made of polyethylene PE 80, PE 100 and PE 100-RC, part 3: fittings; Requirements and tests for the award of the ÖVGW quality mark
ÖVGW QS-W405/1 2018-01	Pipeline systems made of polyethylene PE 100-RC for non-conventional laying techniques in the drinking water supply Part 1: Pipes made of polyethylene PE 100-RC (Resistance to crack)
ÖVGW QS-W406/1 2016-02	Polyethylene piping systems (PE 40, PE 80 and PE 100) for drinking water supply Part 1: Polyethylene pipes
ÖVGW QS-W406/2 2016-07	Pipeline systems made of polyethylene (PE 40, PE 80 and PE 100) for drinking water supply Part 2: PE fittings and non-positive connections for polyethylene pipes
ÖVGW/GRIS QS-W407 2019-11	Pipes, fittings, jacking pipes and pipe connections made of GF-UP for drinking water supply
R 592 0212-2 2015-05	Q+ Swiss quality Drainage systems – Part 2: Flexible pipes and fittings

SVGW ZW 101 2020-11	General Terms and Conditions SVGW Certification Body Water
SVGW ZW 106 2020-01	Apparatus connection and corner shut-off valves
SVGW ZW 110 2019-01	shut-off valves
SVGW ZW 125 2021-01	Drinking water distribution systems with pipes made of PE-X
SVGW ZW 129 2021-01	Drinking water distribution systems with pipes made of PB
SVGW ZW 142 2020-07	Drinking water distribution systems with multi-layer composite pipes
SVGW ZW 148 2020-07	Metal connectors for threaded connections
VDA 230-207 2013-0~~3~~4	Resistance to corrosion of metallic materials – Material and surface technology investigation method
TCS 1111.1 1993-09	Test Code Sheet: Closure
TCS 1112.1 1993-07	Test Code Sheet: Porosity
TCS 1112.4 1990-01	Test Code Sheet: Porosity
TCS 1112.5 1990-01	Test Code Sheet: Porosity
TCS 1112.6 1998-03	Test Code Sheet: Porosity
TCS 1113.1 1993-10	Test Code Sheet: Joint effectiveness
TCS 1113.2 1990-01	Test Code Sheet: Joint effectiveness

TCS 1212.3 1993-07	Test Code Sheet: Accelerated ageing
TCS 1212.5 1995-06	Test Code Sheet: Accelerated ageing
TCS 1212.6 2000-01	Test Code Sheet: Accelerated ageing
TCS 1212.10 2000-01	Test Code Sheet: Accelerated ageing
TCS 1312.2 1990-01	Test Code Sheet: Deformation
TCS 1312.9 1990-01	Test Code Sheet: Deformation
TCS 1314.1 1996-05	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – single pull)
TCS 1314.7 1994-08	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – single pull)
TCS 1314.8 1994-08	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – multiple pull)
TCS 1314.9 1994-08	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – single pull)
TCS 1314.10 1994-08	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – single pull)
TCS 1314.11 1994-08	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – single pull)
TCS 1314.12 1994-08	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – single pull)
TCS 1314.13 1994-08	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints - single pull)
TCS 1314.14 1995-05	Test Code Sheet: Tension - (Resistance to pull-out of assembled joints – single pull)

TCS 1314.15 2000-01	Test Code Sheet: Tension – (Resistance to pull-out of assembled joints – single pull)
TCS 1315.2 1994-07	Test Code Sheet: Torque – Connection and Disconnection
TCS 1412.1 1998-03	Test Code Sheet: Corrosion protection
TCS 1611.5 1994-04	Test Code Sheet: Means for connection and disconnection
TCS 2211.2 1990-01	Test Code Sheet: Contamination – vacuum when submerged
TCS 4001.13 2012-05	Test Code Sheet: Fittings for use with metal pipe and fittings for use with plastic pipe – Tension – Resistance to pull-out of assembled joint – Single pull
TCS 5011.1 1998-10	Test Code Sheet: Measurement of linear dimensions
TCS 6001.1 2000-07	Test Code Sheet: Marking for identification
KIWA BRL 5602 2016-10	Plastics piping systems of PE-RT intended for underfloor heating
KIWA BRL 5603 2016-10	Plastics piping systems of PE-X intended for underfloor heating
KIWA BRL 5610 2016-10	Plastic piping systems of PE-X/AL intended for heating installations: radiator connections
KIWA BRL 5611 2016-10	Plastic piping systems of PE-RT/AL intended for heating installations: radiator connections
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)
KIWA BRL K536 part B 2011-12	Plastic piping systems of PP-R intended for transport of hot and cold drinking water

KIWA BRL K536 part C 2011-12	Plastic piping systems of PB intended for transport of hot and cold drinking water
KIWA BRL K536 part E 2011-12	Plastic piping systems of PE-X/Al intended for transport of hot and cold drinking water
KIWA BRL K536 part G 2011-12	Plastic piping systems of PE-RT/Al intended for transport of hot and cold drinking water
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)
SAE J1769 2002	SAE Information Report – Protocol for Evaluation of Long Term Permeation – Barrier Durability on Non-Metallic Fuel Tanks
SAE J2044 2009-08	Quick Connect Coupling Specification for Liquid Fuel and Vapor/Emissions Systems
SKZ HR 3.12 2019-06	Heating pipes made of HDPE/AL/HDPE composite pipe
SKZ HR 3.13 2018-05	Heating pipes made of cross-linked medium-density polyethylene PE-MDX
SKZ HR 3.16 2015-04	Heating pipes made of polyethylene with increased temperature resistance
SKZ HR 3.2 2015-04	Heating pipes made of cross-linked polyethylene PE-X
SKZ HR 3.26 2015-02	Testing and monitoring regulations – Pipes and pipe parts made of PE 100 for geothermal probe pipe systems
SKZ HR 3.3 2015-04	Heating pipes made of PP-R and PP-RCT
SKZ HR 3.35 2011-04	Testing and monitoring regulations; Underfloor heating pipes made of polyethylene with increased temperature stability
SKZ HR 3.39 2011-11	Wastewater pipes and fittings made of PP within the building structure

SKZ HR 3.4 2013-05	PB heating pipes
SKZ HR 3.42 2009-04	Testing and monitoring regulations; Pressure pipes made of multi-layer composite pipes PE 80, PE 100, PE-X
Specification of Thüga AG for PE pipes 2016-10	Specification for gas and drinking water pipes made of polyethylene PE 100 and PE 100-RC
VW TL 820 26 1999-07	Fuel filter, functional requirements
VW TL 822 53 2008-12	ZSB fuel lines, functional requirements
VW TL 824 17 2004-04	Two-component nozzle fuel tank area, functional requirements
VW TL 824 75 2014-03	Quick coupling in the SCR system – functional requirements
DIN CERTCO ZP 7644 2018-10	Certification program for threaded fittings made of stainless steel in drinking water installations
DIN CERTCO ZP „Plastic pipe and composite pipe systems“ 2019-03	Plastic pipe and composite pipe systems for hot water surface heating and radiator connections
DIN CERTCO ZP „Plastic pipe systems“ 2015-03	Plastic pipe systems (sewers and pipes)
DIN CERTCO ZP „Plastic pipe systems“ 2017-05	Plastic pipe systems (pressure pipes and fittings)
DIN CERTCO ZP 23.6.1/8 2012	Polyethylene pipes and fittings (PE 100, PE 100 RC) for geothermal energy

6 Environmental simulation tests, mechanical vibration and shock tests and temperature and climate tests on devices, parts and components [Flex C] (D2)

Test type	Measurand/test parameter	Characteristic test methods
Vibration and shock test with electro-dynamic shakers	Acceleration vibration	DIN EN 60068-2-6 DIN EN 60068-2-27
	Frequency of vibration acceleration	
	Acceleration shocks	DIN EN 60068-2-64 DIN EN 60068-2-80 DIN EN 60068-2-81 VW 80000
Climate test	Temperature	DIN EN 60068-2-1 DIN EN 60068-2-2 VW 80000
	Temperature Humidity	DIN EN 60068-2-30 DIN EN 60068-2-38 DIN EN 60068-2-53 VW 80000
Salt spray test	Temperature Salt	ISO 9227 DIN EN 60068-2-11 DIN EN 60068-2-52 DIN EN ISO 11997-1 VW 80000
Condensation test	Temperature Humidity	DIN EN ISO 6770-2 VW 80000
IP protection levels	IP 0X 1X, 2X, 3X, 4X, 5X, 6X, X1, X2, X3, X4, X5, X6, X7, X8	DIN EN 60529 VDE 0470-1 ISO 20653

Characteristic test methods, belonging to the above-mentioned test types

DIN EN 60068-2-1 Environmental testing – Part 2-1: Tests – Test A: Cold
VDE 0468-2-1
2008-01

IEC 60068-2-1 Environmental testing – Part 2-1: Tests – Test A: Cold
2007

DIN EN 60068-2-2 VDE 0468-2-2 2008-05	Environmental testing – Part 2-2: Tests – Test B: Dry heat
IEC 60068-2-2 2007	Environmental testing – Part 2-2: Tests – Test B: Dry heat
DIN EN 60068-2-6 VDE 0468-2-6 2008-10	Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)
IEC 60068-2-6 2008	Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)
DIN EN 60068-2-14 VDE 0468-2-14 2010-04	Environmental testing – Part 2-14: Tests – Test N: Change of temperature (without Nc)
DIN EN 60068-2-27 VDE 0468-2-27 2010-02	Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock
DIN EN 60068-2-29 1995-03	Basic environmental testing procedures – Part 2: Tests – test Eb and guidance: Bump
DIN EN 60068-2-30 2006-06	Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)
DIN EN 60068-2-31 VDE 0468-2-31 2009-04	Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens
DIN EN 60068-2-38 VDE 0468-2-38 2010-06	Environmental testing – Part 2-38: Tests – Test Z/AD: Composite temperature/humidity cyclic test
DIN EN 60068-2-53 VDE 0468-2-53 2011-02	Environmental testing – Part 2-53: Tests and guidance: Combined climatic (temperature/humidity) and dynamic (vibration/shock) tests

DIN EN 60068-2-64 VDE 0468-2-64 2009-04	Environmental testing – Part 2-64: Tests – Test Fh: Vibration, broadband random and guidance
DIN EN 60068-2-78 VDE 0468-2-78 2014-02	Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state
DIN EN 60068-2-80 2006-05	Environmental testing – Part 2-80: Tests – Test Fi: Vibration - Mixed mode
IEC 60068-2-80 2005	Environmental testing – Part 2-80: Tests - Test Fi: Vibration – Mixed mode
DIN EN 60068-2-81 2004-07	Environmental testing – Part 2-81: Tests – Test Ei: Shock – Shock response spectrum synthesis
DIN EN 61373 VDE 0115-106 2011-04 + Ber.1 2018-01	Railway applications – Rolling stock equipment – Shock and vibration tests
DNVGL-CG-0339 2016	Environmental test specification for electrical, electronic and programmable equipment and systems
DIN EN 60529 VDE 0470-1 Ber.2 2019-06	Degrees of protection provided by enclosures (IP Code)
ISO 20653 2013-02	Road vehicles – Degrees of protection (IP code) – Protection of electrical equipment against foreign objects, water and access
DIN EN ISO 9227 2017-07	Corrosion tests in artificial atmospheres – Salt spray tests (only NSS)
DIN EN 60068-2-11 2000-02	Environmental testing – Part 2: Tests; test Ka: Salt mist
DIN EN IEC 60068-2-52 2018-08	Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)

DIN EN ISO 11997-1 2018-01	Paints and varnishes – Determination of resistance to cyclic corrosion conditions – Part 1: Wet (salt fog)/dry/humid
DIN EN ISO 6270-2 2018-04	Paints and varnishes – Determination of resistance to humidity – Part 2: Condensation (in-cabinet exposure with heated water reservoir)
BMW GS 95023 2016-11	Electrical properties and electrical safety of high-voltage components in motor vehicles – requirements and tests
Mercedes MBN LV 123 2014-03	Electrical properties and electrical safety of high-voltage components in motor vehicles – requirements and tests
Volkswagen VW 80303 VW 80302 2014-06	Electrical properties and electrical safety of high-voltage components in motor vehicles – requirements and tests
BMW GS 95024-2-1 2010-01	Electrical and electronic components in motor vehicles – Electrical requirements and tests
BMW GS 95024-2-2 2011-02	Electrical and electronic components in motor vehicles Electrical requirements and tests
BMW GS 95024-3-1 2010-01	Electrical and electronic components in motor vehicles up to 3.5t – general requirements, test conditions and tests
Mercedes MBN LV 124-1 2013-03	Electrical and electronic components in passenger cars up to 3.5t – general requirements, test conditions and tests – Part I: Electrical requirements and tests 12 V vehicle electrical system
Mercedes MBN LV 124-2 2013-08	Electrical and electronic components in passenger cars up to 3.5t – general requirements, test conditions and tests Part 2: Environmental requirements
Volkswagen VW 80000 2021-07	Electrical and electronic components in motor vehicles up to 3.5 t – General requirements, test conditions and tests

Volkswagen VW 80101 2009-03	Electrical and electronic components in motor vehicles up to 3.5 t – General requirements, test conditions and tests
VDA 320 2014-08	Electrical and electronic components in motor vehicle 48 V electrical systems, test conditions and tests
BMW GS 95026 2013-05	Electrical and electronic components in motor vehicle 48 V electrical systems, test conditions and tests
Mercedes MBN LV 148 2013-11	Electrical and electronic components in motor vehicle 48 V electrical systems, test conditions and tests
Volkswagen VW 82148 2019	Electrical and electronic components in motor vehicle 48 V electrical systems, test conditions and tests
Volkswagen VW 80332 2019	Automotive high-voltage contact (Not IP6K9K, IPX7 PG 50 – (high-frequency properties of a HV connector))
ISO 16750-2 2012-11	Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 2: Electrical loads
ISO 16750-3 2012-12	Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 3: Mechanical loads
ISO 16750-4 2010-04	Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 4: Climatic loads
ISO 16750-5 2010-04	Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 5: Chemical loads
BMW GS 95006-7-1 2010-05	Motor vehicle connectors – test specification
Mercedes MBN 10384 (LV 214) 2010-11	Motor vehicle connectors – test specification

Volkswagen VW 75174 2010-04	Motor vehicle connectors – test specification
Porsche PTL 12100-A1005 2010-05	Motor vehicle connectors – test specification
Volkswagen VW 80302 (LV215-2) 2013-02	High-voltage connectors in vehicles – requirements and test conditions (not dust)
Volkswagen VW 80304 (LV215-1) 2013-03	Electrics/Electronics – Requirements for HV components (not dust)
Volkswagen VW 80332 2019-01	High-voltage connectors in vehicles – requirements and test conditions

7 Testing the noise behaviour of fittings and devices in water installations [Flex A] (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:

AITM	Airbus Industrie Test Method
AK	Working Group
ASTM	American Society for Testing and Materials
DBS	Deutsche Bahn Standard
DIN	German institute for standardization
DIN CERTCO ZP	Test method of the basic certification program of Certification body of TÜV Rheinland Group
DMA	Dynamic Mechanical Analysis
DNV	Det Norske Veritas
DSC	Differential Scanning Calorimetry
DVGW	German Association for Gas and water
DVS	German association for welding
EN	European Standard
ÖVGW/GRIS QS	Quality Standard of Austrian Standard for Gas and Water/Quality Association Tubes within housing water developmant
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
KIWA BRL	Rating guideline of Dutch Test Institute for drinking water articles
OIT	Oxidations-Indikationszeit Oxydationindication Time
ÖNORM	Austrian Test standards
SKZ HR	In-house method of the SKZ - TeConA GmbH
SVGW	Swiss Association of Gas-Water
TSI_WAG	Technical Specification of Interoperability for goods train
UIC	Union International des chemins de fer
VDE	Association of electrotechnic electronic information technic

Deutsche Akkreditierungsstelle

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

Valid from: **28.11.2022**

Date of issue: 09.12.2025

This annex is a part of the accreditation certificate D-PL-13119-02-00.

Holder of partial accreditation certificate:

IMA Materialforschung und Anwendungstechnik GmbH
Am Lagerplatz 4, 01099 Dresden

at the locations

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

The testing laboratory meets the minimal requirements of DIN EN ISO/IEC 17025:2018 and, if applicable, additional legal and normative requirements, including those in relevant sectoral schemes, in order to carry out the conformity assessment activities listed below.
The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and confirm generally with the principles of DIN EN ISO 9001.

manual non-destructive tests (ultrasonic, visual, magnetic and penetrant testing) as well as mechanical ultrasonic testing of metallic and fibre reinforced materials and plastic as well as composite materials

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de.

Flexible scope of accreditation:

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 – Flexible scope of accreditation according to category A [Flex A].

The laboratory has an updated list of all test methods used in the flexible scope of accreditation, which is made publicly available on its website.

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

1 Manual and mechanised non-destructive testing (D1, D2)

1.1 Ultrasonic testing - Manual and mechanised surface and volume testing of metallic components, fibre reinforced materials and plastics as well as composites materials

DIN EN ISO 16810 2014-07	Non-destructive testing - Ultrasonic testing - General principles
DIN EN ISO 16823 2014-07	Non-destructive testing - Ultrasonic testing - Transmission technique
DIN EN ISO 17640 2019-02	Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment
DIN EN 10228-3 2016-10	Non-destructive testing of steel forgings - Part 3: Ultrasonic testing of ferritic or martensitic steel forgings
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 [1)] 2019-01	Test instruction for ultrasound testing by means of ultrasound scanning system LS100

IMA AN1/26 [1)] 2019-05	Non-destructive testing (ZfP) - Ultrasonic examination (UT)

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

DIN EN ISO 3452-1 2022-02	Non-destructive testing - Penetrant testing - Part 1: General principles
DIN EN 1371-1 2012-02	Founding - Liquid penetrant testing - Part 1: Sand, gravity die and low pressure die castings
DIN EN 10228-2 2016-10	Non-destructive testing of steel forgings - Part 2: Penetrant testing
IMA AN1/27 [1)] 2019-03	Non-destructive testing (ZfP) - Liquid penetrant testing (PT)

1.3 Magnetic 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
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 [1)] 2019-11	Non-destructive testing (ZfP) - Magnetic particle testing (MT)

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

DIN EN 13018 2016-06	Non-destructive testing - Visual testing - General principles
DIN EN ISO 17637 2017-04	Non-destructive testing of welds - Visual testing of fusion-welded joints
IMA AN1/14 [1)] 2019-06	Non-destructive testing of welds - Visual testing of fusion-welded joints

Abbreviations used:

AN1	Work instructions of Labors für zerstörungsfreie Prüfung
DIN	Deutsches Institut für Normung e.V. - German institute for Standardisation
IMA-PV	Test specification of IMA Dresden

[1)] not covered within the flexible scope of accreditation Flex A

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-13119-02-03 according to DIN EN ISO/IEC 17025:2018

Valid from: **28.11.2022**

Date of issue: 09.12.2025

This annex is part of the Accreditation Certificate D-PL-13119-02-00.

Holder of the Accreditation Certificate:

IMA Materialforschung und Anwendungstechnik GmbH
Am Lagerplatz 4, 01099 Dresden

with the location

IMA Materialforschung und Anwendungstechnik GmbH
Wilhelmine-Reichard-Ring 4, 01109 Dresden
Am Lagerplatz 4, 01099 Dresden

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Tests in the field:

Electrical engineering

Flexible Scope of Accreditation:

The testing laboratory is permitted to use standardised or equivalent test methods listed here with different issue dates without being required to prior inform and obtain approval from DAkkS (flexibilization according to category A).

The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation. The list is publicly available on the website of the testing laboratory

Content

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
1	**Electrical tests of devices, components and assemblies**		
Electrical engineering	VDE 0660 - 100: 2015 DIN EN 60947-1:2015 *(withdrawn standard)* EN 60947-1: 2007 + A1:2011 + A2:2014	Low-voltage switchgear and controlgear - Part 1: General rules	
Electrical engineering	IEC 60947-1 2007 + A1:2010 + A2:2014	Low-voltage switchgear and control gear - Part 1: General rules	
Electrical engineering	VDE 0660 - 101: 2014 DIN EN 60947-2:2014 *(withdrawn standard)* EN 60947-2: 2006 + A1:2009 + A2:2013	Low-voltage switchgear and controlgear - Part 2: Circuit-breakers	
Electrical engineering	IEC 60947-2 2006 + A1:2009 + A2:2013	Low-voltage switchgear and control gear - Part 2: Circuit-breakers	
Electrical engineering	VDE 0660 - 107 :2017 DIN EN 60947-3:2017 *(withdrawn standard)* EN 60947-3: 2009 + A1:2012 + A2:2015	Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units	
Electrical engineering	IEC 60947-3 2008/ A1:2012 + A2:2015	Low-voltage switchgear and control gear - Part 3: Switches, disconnectors, switch disconnectors and fuse-combination units	
Electrical engineering	VDE 0660 - 102:2014 DIN EN 60947-4-1:2014 *(withdrawn standard)* EN 60947-4-1:2010 + A1:2012	Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters	
Electrical engineering	IEC 60947-4-1:2009 + A1:2012	Low-voltage switchgear and control gear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motorstarters	
Electrical engineering	VDE 0660 - 117:2013 DIN EN 60947-4-2:2013 EN 60947-4-2:2012	Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters	
Electrical engineering	IEC 60947-4-2:2011 + Cor.: 2012	Low-voltage switchgear and control gear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters	

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
Electrical engineering	VDE 0660 - 109:2015 DIN EN 60947-4-3:2015 EN 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	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 + Cor.:2005 + A1:2009	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices (IEC 60947-5-1:2016 + COR1:2016)	
Electrical engineering	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	
Electrical engineering	VDE 0660 - 208:2014 DIN EN 60947-5-2:2014 *(withdrawn standard)* EN 60947-5-2:2007 + A1:2012	Low-voltage switchgear and controlgear - Part 5-2: Control circuit devices and switching elements - Proximity switches	
Electrical engineering	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	Low-voltage switchgear and controlgear - Part 6-1: Multiple function equipment - Transfer switching equipment	
Electrical engineering	IEC 60947-6-1:2005 + A1:2013	Low-voltage switchgear and controlgear - Part 6-1: Multiple function equipment - Transfer switching equipment	
Electrical engineering	VDE 0660 - 115:2007 DIN EN 60947-6-2:2007 EN 60947-6-2:2003 + A1:2007	Low-voltage switchgear and controlgear - Part 6-2: Multiple function equipment - Control and protective switching devices (or equipment) (CPS)	
Electrical engineering	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)	

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
Electrical engineering	VDE 0611 - 1:2010 DIN EN 60947-7-1:2010 EN 60947-7-1:2009	Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	
Electrical engineering	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	Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	
Electrical engineering	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	Low-voltage switchgear and controlgear - Part 7-3: Ancillary equipment - Safety requirements for fuse terminal blocks	
Electrical engineering	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 *(withdrawn standard)* EN 61439-1:2011	Low-voltage switchgear and controlgear assemblies - Part 1: General rules	
Electrical engineering	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 *(withdrawn standard)* EN 61439-2 2011	Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies	
Electrical engineering	IEC 61439-2:2011	Low-voltage switchgear and controlgear assemblies Part 2: Power switchgear and controlgear assemblies	
Electrical engineering	VDE 0660-600-3:2013 DIN EN 61439-3:2013 EN 61439-3:2012	Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO)	
Electrical engineering	IEC 61439-3:2012	Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO)	

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
Electrical engineering	VDE 0660-600-4:2013 DIN EN 61439-4:2013 EN 61439-4:2013	Low-voltage switchgear and controlgear assemblies – Part 4: Particular requirements for assemblies for construction sites (ACS)	
Electrical engineering	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 + Cor.: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 *(withdrawn standard)* EN 61535:2009 + A1:2013 IEC 61535:2009 + A1:2012	Installation couplers intended for permanent connection in fixed installations	
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 0,2 mm² up to 35 mm² (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 mm² up to 300 mm²	
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	

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
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	
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 *(withdrawn standard)* 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 *(withdrawn standard)* EN 60077-2:2002 IEC 60077-2:1999, modified	Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules	
Electrical engineering	VDE 0115-460-3:2003 DIN EN 60077-3:2003 *(withdrawn standard)* 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 *(withdrawn standard)* EN 60664-1:2007 IEC 60664-1:2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
Electrical engineering	VDE 0115-200:2008 DIN EN 50155:2018 *(withdrawn standard)*	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 50124-2:2017 VDE 0115-107-2:2017-12	Railway applications - Insulation coordination - Part 2: Overvoltages and related protection	
Electrical engineering	DIN EN 60898-1:2003 *(withdrawn standard)* 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	
2	**Tests on electrical connectors**		
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	

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
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	
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	
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 (connectors)	
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	

Field of testing	Standard or test method/issue	Title of the standard or test method	Restriction on the test procedure
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	

Abbreviations used:

DIN Deutsches Institut für Normung e.V. – German institute for standardization
EN Europäische Norm – European Standard
IEC International Electrotechnical Commission
ISO International Organization for Standardisation
VDE Verband der Elektrotechnik Elektronik Informationstechnik e.V. - Association of electrotechnic electronic information technic