

## “Deutsche Akkreditierungsstelle GmbH“

### Annex to the Accreditation Certificate D-PL-11349-01-00 according to DIN EN ISO/IEC 17025:2018

**Valid from: 2022-08-01**

Date of issue: 2022-08-01

Holder of certificate:

**ift Rosenheim GmbH**

with its sites:

**Theodor-Gietl-Straße 7-9, 83026 Rosenheim**

**Theodor-Gietl-Straße 4, 83026 Rosenheim**

**Am Oberfeld 21, 83026 Rosenheim**

**Am Oberfeld 14, 83026 Rosenheim**

**Sophienhammer, 59757 Arnsberg**

The testing laboratory fulfils the minimum requirements according to DIN EN ISO/IEC 17025:2018 and where applicable, additional legal and normative requirements, including those in relevant sectoral programmes, in order to carry out the conformity assessment activities listed below.

The requirements for the management system in DIN EN ISO/IEC 17025 are written in a language relevant for testing laboratories and are overall in accordance with the principles of DIN EN ISO 9001

**Building physics testing of acoustics, heat and radiant energy on windows, pedestrian doors and industrial, commercial and garage doors and gates, and facades;**

**Tests in the fields of safety and security, especially smoke control, fire protection, burglary resistance, safety barriers,function/failure;**

**Fitness for use with/without simulation of ageing and environmental influences, especially for construction products of the building shell, such as windows,facades, doors (pedestrian doors), , industrial, commercial and garage doors and gates, non-loadbearing external walls, blinds and shutters (venetian blinds, solar protection devices) as well as their components and**

*This certificate annex is only valid together with the certificate issued in writing and reflects the status at the time of the date of issue. The current status of the valid and supervised accreditation can be found in the database of accredited bodies of the German Accreditation Body ([www.dakks.de](http://www.dakks.de)).*

**materials such as glass/glazings, frame profiles, material composites, locks, hardware, electromechanical components, insulating materials, adhesives, coatings, sealing strips and sealing profiles**

**Testing of construction products (System 3 for the assessment and verification of constancy of performance within the scope of Regulation (EU) No. 305/2011 to define harmonised conditions for the marketing of construction products (ConstructionProducts Regulation)**

**Testing of reaction to fire and noise absorption of construction products for which the reference to a relevant harmonised technical specification is not required (point 3, Annex V, (EU) no. 305/2011)**

**Within the accreditation scopes marked with \*, the testing laboratory is only permitted to use the standardised test methods or test methods equivalent to them listed here with different edition statuses, without requiring prior information and approval by the DakKS (German Accreditation Body).**

**Within the test areas marked with \*\*, the testing laboratory is permitted to freely select standardised test methods or test methods equivalent to them , without requiring prior information and approval by the DAkKS.**

**Within the test areas marked with \*\*\*, the testing laboratory is permitted to modify, refine and develop new test methods without requiring prior information and approval by the DakKS. The listed test methods are exemplary.**

**A current list of all testing methods in the flexible accreditation scope is maintained by the testing laboratory.**

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

Theodor-Gietl-Straße 7-9, 83026 Rosenheim	R7
Theodor-Gietl-Straße 4, 83026 Rosenheim	R4
Am Oberfeld 21, 83026 Rosenheim	OF21
Am Oberfeld 14, 83026 Rosenheim	OF14
Sophienhammer, 59757 Arnsberg	A

**1 Fitness for use and ageing of construction products, building components and accessories**  
*e.g. windows, external and internal pedestrian doors, frames, door leaves, industrial, commercial and garage doors, facades, non-loadbearing external walls, internal partition walls, conservatories, NSHV, air tight fire and smoke control doors and shutters (e.g. smoke control doors and shutters, dampers etc.), locks, hardware*

**1.1 Fitness for use, tightness-und pressure tests \*\*\***

DIN EN 1026 2016-09	Windows and doors - Air permeability - Test method	R7
DIN EN 1027 2016-09	Windows and doors - Water tightness - Test method	R7
DIN EN 1294 2000-07	Door leaves - Determination of the behaviour under humidity variations in successive uniform climates	R7
DIN EN 12114 2000-04	Thermal performances of buildings - Air permeability of building components and building elements - Laboratory test method	R7
DIN EN 12153 2000-09	Curtain walling - Air permeability - Test method	R7 OF14
DIN EN 12155 2000-10	Curtain walling - Watertightness - Laboratory test under static pressure	R7 OF14
DIN EN 12179 2000-09	Curtain walling - Resistance to wind load - Test method	R7 OF14
DIN EN 12211 2016-10	Windows and doors - Resistance to wind load - Test method	R7
DIN EN 12427 2000-11	Industrial, commercial and garage doors and gates - Air permeability - Test method	R7
DIN EN 12453 2017-11	Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements and test methods	R7

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DIN EN 12489 2000-11	Industrial, commercial and garage doors and gates - Resistance to water penetration - Test method	R7
DIN EN 12604 2021-05	Industrial, commercial and garage doors and gates - Mechanical aspects - Requirements and test methods <i>(withdrawn standard; dated reference with 2000 in EN 13241:2006+A2:2016)</i>	R7
DIN EN 12605 2000-08	Industrial, commercial and garage doors and gates - Mechanical aspects - Test methods	R7
DIN EN 12865 2001-07	Hygrothermal performance of building components and building elements - Determination of the resistance of external wall systems to driving rain under pulsating air pressure	R7
DIN EN 12978 2009-10	Industrial, commercial and garage doors and gates - Safety devices for power operated doors and gates - Requirements and test methods Only Clauses 7.7.1 Sensing function and detection capability 7.8 Adjustments 7.9 Sensor fixing 7.12 Marking 7.13 Information for installation and use	R7
DIN EN 13050 2011-09	Curtain Walling - Watertightness - Laboratory test under dynamic condition of air pressure and water spray	R7 OF14
DIN EN 13051 2001-11	Curtain walling - Watertightness - Site test	R7 OF14
DIN EN 13141-1 2019-04	Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 1: Externally and internally mounted air transfer devices	R7
DIN EN 14201 2004-04	Blinds and shutters - Resistance to repeated operations (mechanical endurance) - Methods of testing	R7
DIN EN 14963 2006-12 Corrigendum 1 2007-06	Roof coverings - Continuous rooflights of plastics with or without upstands - Classification, requirements and test methods; Corrigenda to DIN EN 14963:2006-12	R7

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DIN EN 1873 2006-03	Prefabricated accessories for roofing - Individual roof lights of plastics - Product specification and test methods	R7
DIN EN 1873 2016-07	Prefabricated accessories for roofing - Individual rooflights of plastics - Product specification and test methods; German version EN 1873:2014+A1:2016	
DIN EN 1932 2013-09	External blinds and shutters - Resistance to wind loads - Method of testing and performance criteria	R7
DIN EN 12444 2001-02	Industrial, commercial and garage doors and gates - Resistance to wind load - Testing and calculation	R7
DIN 4103-1 2015-06	Internal non-loadbearing partitions - Part 1: Requirements and verification	R7
DIN 68706-1 2020-06-02	Interior doors made from wood and wood-based panels - Part 1: Door leaves; Concepts, sizes, requirements	R7
DIN 68706-2 2002-02	Interior doors made from wood and wood-based panels - Part 2: Door crozes; Concepts, sizes, installation	R7
EAD 090062-00-0404 2018-07	Kits for external wall claddings mechanically fixed	OF14
AAMA 501.1 2017	Standard Test Method for Exterior Windows, Curtain Walls and Doors for Water Penetration Using Dynamic Pressure	R7 OF14
AAMA 501.2 2015	Quality Assurance and Diagnostic Water Leakage - Field Check of Installed Storefronts, Curtain Walls and Sloped Glazing Systems	R7 OF14
AAMA 501.5 2007	Test Method for Thermal Cycling of Exterior Walls	R7 OF14
AAMA 501 2015	Methods of tests for exterior walls	R7 OF14
ASTM E 283/E283M 2019	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen	R7 OF14

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ASTM E 330/E 330 M 2014	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference	R7 OF14
ASTM E 331 2000 (2009 reapproved, 2016 reapproved)	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference	R7 OF14
ASTM E 547 2000 (2009 reapproved, 2016 reapproved)	Standard test method for water penetration of exterior windows, skylights, doors and curtain walls by cyclic static air pressure difference	R7 OF14
CWCT Building Envelope 2006-03	Standard for systemised building envelopes and standard test methods for building envelopes – (Part 0 -Part 8)	R7 OF14
CWCT Technical Note 66 2010-02	Safety and fragility of glazed roofing: guidance on specification	R7 OF14
CWCT Technical Note 67 2010-02	Safety and fragility of glazed roofing: testing and assessment	R7 OF14
CWCT Technical Note 75 2012-06	Impact performance of building envelopes: guidance on specification	R7 OF14
CWCT Technical Note 76 2012-06	Impact performance of building envelopes: method for impact testing of cladding panels	R7 OF14
NAFS 2017	North American fenestration standard for windows, doors and skylines (AAMA 101-1.S.2/A440)	R7 OF14
RAL-GZ 426 2020-09	Internal pedestrian doors made of wood and wood based panel products - Quality control - Part I: Door leaves	R7
RAL-GZ 695 2016-07	Quality regulations and test specifications for windows, external pedestrian doors, curtain walling and conservatories	R7
RAL-GZ 716 2019-04	Quality regulations and test specifications for PVC window profile systems	R7

“ift-Prüfregel“ 4056 2015-02	“Prüfung der statischen und dynamischen Windlast – Infoblatt zum ift-Hausverfahren“ Testing the static and dynamic wind load - Info sheet on the ift in-house procedure	R7
ift-Guideline AB-02/1-2 2010-03	Air tightness of roller shutter boxes; Requirement and testing	R7
ift-Guideline FE-07/1 2005-10	Floodwater resistance of windows and doors - Requirements, Testing, Classification	R7
ift- Guideline MO-01/1 2007-01	Wall connection of windows - Part 1 Method to determine the fitness for use of weatherproofing systems	R7
ift- Guideline MO-02/1 2015-06	Wall connection of windows – Part 2 Procedure for determining the fitness for use of fastening systems	R7
ift- Guideline MO-04/2 2019-08	Proof of suitability of frame foam - Testing of polyurethane assembly foam for fastening door frames for internal doors	R7
ift- Guideline FE-06/2 2017-02	Testing of mechanical and butt-welded T-connections for PVC windows	R7
ift- Guideline FE-13/1 2011-04	Suitability of PVC profiles for windows – Testing and classification	R7
ift- Guideline TU-11/1 2022-05	Recommendation for use and testing of ready-to-use door elements (door, frame, seal, fittings) inside closed buildings	R7
ift- Guideline VE-08/4 2017-03	Basis for the evaluation of direct glazing systems	R7

**The test ranges listed in the table are characterised by the test methods listed above.**

Type of test	Test parameter within the limits	
Test rig „Tightness and wind load“ possibly as special design with additional testing devices (e.g. fan, anemometer)	Pressure air (wind)	p: -3 bis -10000 Pa +3 bis +10000 Pa
	Flow rate air	$\dot{V}$ : $0,1 \frac{m^3}{h} - 950 \frac{m^3}{h}$
	Flow rate water	$\dot{V}$ : $3 \frac{l}{min} - 500 \frac{l}{min}$

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Type of test	Test parameter within the limits	
	Velocity air (wind)	v: $0,6 \frac{m}{s} - 40 \frac{m}{s}$
Rotameter	Flow rate air	$\dot{V}$ : $15 \frac{l}{h} - 150 \frac{l}{h}$
Test rig for high water levels	Height of the water	from 1 mm level of water
Calculation software „CFD flow calculation“ (Computational-Fluid-Dynamic)	Aerodynamic parameters: - Mass flow $m$ (in kg/s) - Volume flow $v$ (in m <sup>3</sup> /s) - Flow rate coefficient $c$	

**1.2 Operability, continuous performance, and resistance against ageing  
under mechanical and environmental influences \*\*\***

DIN EN 947 1999-05	Hinged or pivoted doors - Determination of the resistance to vertical load	R7
DIN EN 948 1999-11	Hinged or pivoted doors - Determination of the resistance to static torsion	R7
DIN EN 949 1999-05	Windows and curtain walling, doors, blinds and shutters - Determination of the resistance to soft and heavy body impact for doors	R7
DIN EN 950 1999-11	Door leaves - Determination of the resistance to hard body impact	R7
DIN EN 951 1999-05	Door leaves - Method for measurement of height, width, thickness and squareness	R7
DIN EN 952 1999-11	Door leaves - General and local flatness - Measurement method	R7
DIN EN 1191 2013-04	Windows and doors - Resistance to repeated opening and closing - Test method	R7

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DIN EN 12046-1 2020-11	Operating forces - Test method - Part 1: Windows	R7
DIN EN 12046-2 2000-12	Operating forces - Test method - Part 2: Doors	R7
DIN EN 13126-1 2022-04	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 1: Requirements common to all types of hardware	R7
DIN EN 13126-2 2021-10	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 2: Window fastener handles	R7
DIN EN 13126-3 2012-02	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 3: Handles, primarily for Tilt&Turn, Tilt-First and Turn-Only hardware	R7
DIN EN 13126-4 2022-01	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 4: Espagnolettes	R7
DIN EN 13126-5 2015-01	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 5: Devices that restrict the opening of windows and door height windows	R7
DIN EN 13126-6 2018-10	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 6: Variable geometry stay hinges (with or without a friction stay)	R7
DIN EN 13126-7 2021-10	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 7: Finger catches	R7
DIN EN 13126-8 2018-01	Building hardware - Hardware for windows and door height windows - Part 8: Requirements and test methods for Tilt and Turn, Tilt-First and Turn-Only hardware	R7
DIN EN 13126-9 2013-04	Building hardware - Requirements and test methods for windows and door height windows - Part 9: Hardware for horizontal and vertical pivot windows	R7
DIN EN 13126-10 2009-02	Building hardware - Requirements and test methods for windows and doors height windows - Part 10: Arm-balancing systems	R7

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DIN EN 13126-11 2009-02	Building hardware - Requirements and test methods for windows and doors height windows - Part 11: Top hung projecting reversible hardware	R7
DIN EN 13126-12 2009-03	Building hardware - Requirements and test methods for windows and doors height windows - Part 12: Side hung projecting reversible hardware	R7
DIN EN 13126-13 2012-08	Building hardware - Hardware for windows and balcony doors Requirements and test methods - Part 13: Sash balances	R7
DIN EN 13126-14 2012-08	Building hardware - Hardware for windows and balcony doors Requirements and test methods - Part 14: Sash fasteners	R7
DIN EN 13126-15 2019-07	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 15: Rollers for horizontal sliding and hardware for sliding folding windows	R7
DIN EN 13126-16 2019-07	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 16: Hardware for Lift and Slide windows	R7
DIN EN 13126-17 2019-07	Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 17: Hardware for Tilt and Slide windows	R7
DIN EN 13126-19 2011-05	Building hardware - Requirements and test methods for windows and door height windows - Part 19: Sliding Closing Devices	R7
DIN EN 13527 2001-01	Shutters and blinds - Measurement of operating force – Test methods	R7
DIN EN 14608 2004-09	Windows - Determination of the resistance to racking (Racking) (partial replacement for DIN EN 107)	R7
DIN EN 14609 2004-09	Windows - Determination of the resistance to static torsion (partial replacement for DIN EN 107)	R7

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DIN 4102-18 1991-03	Fire behaviour of building materials and components - Part 18: fire barriers, verification of automatic closure (continuous performance test)	R7 A
AAMA 501.4 Revision 2009	Recommended Static Test Method for Evaluating Curtain Wall and Storefront Systems Subjected to Seismic and Wind Induced Interstory Drift	R7
AAMA 501.6 Revision 2009	Recommended Dynamic Test Method for Determining the Seismic Drift Causing Glass Fallout from a Wall System	R7
AAMA 501.7 2017	Recommended static test method for evaluating windows, window wall, curtain wall and storefront systems subjected to vertical inter-story movements	R7
ASTM E2068 2000 (2008 reapproved, 2016 reapproved)	Standard test method for determination of operating force of sliding windows and doors	R7

**The test ranges listed in the table are characterised by the test methods listed above.**

Type of Test	Test parameter	Test range
- Durability test unit (incl. Measuring devices for velocity, force and torque) - Multi-function-assembly walls -Weighing balance	Mechanical ageing (e.g. continuous performance / durability) - Visual inspection - Performance check - Displacement	Velocity (reference velocity) v: $\pm 0,02 \frac{m}{s} - 0,7 \frac{m}{s}$
- Multi-function assembly walls - Hanging scale - Force gauge - Pneumatical/ hydraulical load transmission - Weighing balance	Mechanical ageing (e.g. Racking, Torsion, Operating forces)  - Visual inspection - Performance check - Displacement	Force F: 100 N - 1000 N  Torque M: 2 to 20 Nm  Mass (loading) m: up to 400 kg
- Force gauge	Force	F: 20 - 500 N
- Torque gauge	Torque	M: 0,5 - 120 Nm

**1.3 Testing of serviceability and ageing behaviour of accessories / building components \*\*\***  
*e.g. hinges, locks, door fittings, door protective devices, window fittings etc.*

DIN EN 179 2008-04	Building hardware - Emergency exit devices operated by a lever handle or push pad, for use on escape routes - Requirements and test methods	R7
DIN EN 1125 2008-04	Building hardware - Panic exit devices operated by a horizontal bar, for use on escape routes - Requirements and test methods	R7
DIN EN 1154 2003-04 + Berichtigung 1 2006-06 + Beiblatt 1 2003-11	Building hardware - Controlled door closing devices - Requirements and test methods: + Corrigendum 1 + Supplement 1	R7
DIN EN 1303 2015-08	Building hardware - Cylinders for locks - Requirements and test methods	R7
DIN EN 1527 2022-02	Building hardware - Hardware for sliding doors and folding doors - Requirements and test methods	R7
DIN EN 1906 2012-12	Building hardware - Lever handles and knob furniture - Requirements and test methods	R7
DIN EN 1935 2002-05	Building hardware - Single-axis hinges - Requirements and test methods	R7
DIN EN ISO 6988 1997-03	Metallic and other non-organic coatings - Sulfur dioxide test with general condensation of moisture	R7
DIN EN 12209 2016-10	Building hardware - Mechanically operated locks and locking plates- Requirements and test methods	R7
DIN EN 13637 2015-12	Building hardware - Electrically controlled exit systems for use on escape routes - Requirements and test methods	R7
DIN EN 14846 2008-11 prEN 14846 2015-07	Building hardware - Locks and latches – Electromechanically operated locks and striking plates - Requirements and test methods	R7

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DIN EN 15684 2021-05	Building hardware - Mechatronic cylinders - Requirements and test methods	R7
E DIN EN 15685 2011-04	Building hardware - Multipoint locks and their locking plates - Requirements and test methods (The draft of 2019-09 is defective)	R7
DIN EN 16005 2013-01 + Berichtigung 1 2015-10	Power operated pedestrian doorsets - Safety in use - Requirements and test methods + Corrigendum 1	R7
DIN 18251 2020-04	Locks - Mortise locks and multipoint locks - Terms, definitions and dimensions	R7
DIN 18273 1997-12 (2015-07)	Building hardware - Lever handle units for fire doors and smoke control doors - Terms and definitions, dimensions, requirements, testing and marking <i>Version from 1997-12 is dated in M VVTB 2021/1;</i>	R7
DIN 18255 2002-05	Profile cylinders for door locks - Terminology, dimensions, requirements and marking	R7
DIN 18257 2022-02	Building hardware - Security plates - Definitions, measurements, requirements, marking	R7
EAD 020001-01-0405 2017-03	Multi-axis concealed hinge assemblies	R7
EAD 020061-00-0405 2021-09	Multi-axis concealed hinges with self-closing function	R4
QM328 – Anlage 2 2018-01	ift in-house method – Combination tests in accordance with EN 13126-8:2017 and EN 1191:2012 according to QM328 “Hardware”	R7
QM342 – Anlage 2 2021-09	ift in-house method – Durability test of locks and multi-point locking systems (Testing with relevant characteristics of EN 1191:2012) to ensure the exchangeability in the field of durability test according to QM342 „Locks“	R7

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**The test ranges listed in the following table are characterised by the specified test methods**

<b>Type of Test</b>	<b>Test parameter within the limits</b>		<b>Typical test method</b>
Mechanical durability, durability of operational reliability, sustainability	Mechanical ageing	Velocity (reference velocity) v: $\pm 0,02 \frac{m}{s} - 2,0 \frac{m}{s}$  Deformation (displacement) 0,1 mm – 10 m	EN1191 EN13126-8 EN13126-16 EN1125 EN179 EN1154 EN1303 EN 12209
Operating forces Release force Re-engaging force Vertical/horizontal load Static torsion Retention force	Force	10 N - 50 kN	EN 12046-1 EN12046-2 EN13527 EN 179, EN 1125 EN14608 EN 14609 EN947, EN948 EN 12209
Operating forces Opening and closing moment Key strength	Torque	0,5 Nm - 500 Nm	EN 12046-1 EN12046-2 EN 1154, EN 1125 EN179, EN1303 EN 12209
Pendulum test incl. soft impact Hard impact Weight	Mass	5 kg- 500 kg	EN13049 EN 14019 EN949 EN 950

**1.4 Compressive and tensile strengths of accessories, building components and materials, e.g. adhesives/sealants; frame profiles (material joints); wood and wood materials; welding corner joints, glass \*\*\***

DIN EN ISO 12543-4  
2022-03      Glass in building - Laminated glass and laminated safety glass - Part 4: Test methods for durability      R7

DIN EN 205  
2016-12      Adhesives - Wood adhesives for non-structural applications - Determination of tensile shear strength of lap joints      R7

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DIN EN 1288-3 2000-09	Glass in building - Determination of the bending strength of glass - Part 3: Test with specimen supported at two points (four point bending)	R7
E DIN EN ISO 1288-3 2007-10	Glass in building - Determination of the bending strength of glass Part 3: Test with specimen supported at two points (four point bending)	R7
DIN EN 14024 2005-01	Metal profiles with thermal barrier - Mechanical performance - Requirements, proof and tests for assessment	R7
DIN EN 12311-2 2013-11	Flexible sheets for waterproofing - Determination of tensile properties - Part 2: Plastic and rubber sheets for roof waterproofing	R7
DIN EN 14256 2007-10	Adhesives for non-structural wood applications - Test method and requirements for resistance to static load	R7
DIN EN 14257 2019-12	Adhesives - Wood adhesives - Determination of tensile strength of lap joints at elevated temperature (WATT'91)	R7
DIN EN 16758 2021-11	Curtain walling - Determination of the strength of shear connections - Test method and requirements	R7
DIN EN 17146 2019-04	Determination of the strength of infill supports - Test method and requirements	R7
ETAG 002-1 2012-05 (Amended version)	Guideline for European technical approval of Structural Sealant Glazing Kits (SSGK) - Part 1: Supported and unsupported systems	R7
ETAG 002-3 2002-03	Guideline for European technical approval of Structural Sealant Glazing Kits (SSGK) - Part 3: Systems incorporating profiles with a thermal barrier	R7
AAMA 505(-17) 2017-08	Dry shrinkage and composite performance thermal cycling test procedure	R7

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“DIBt-Mitteilung 5/2004“ 2004-10 (Communications)	(Support zones) Verification of usability for mechanical connections in stick construction with facade elements with linear support	R7
“DIBt-Mitteilung 6/ 17 Jg.“ (Communications) 1986-08	Testing of stability of metal-plastic composite profiles with thermal barrier	R7
ift- Guideline FE-08/1 2008-05	Corner joints for wood windows - Requirements, testing and assessment	R7
ift- Guideline FE-09/1 2009-09	Weldable-corner-connector (for external ped. doors and windows)- Requirements, testing and assessment	R7
ift- Guideline HO-10/1 2002-11	Solid, Finger-jointed and Laminated Profiles for Wooden Windows - Requirement and Testing	R7
GG SB TBDK- Directive 2014-05	Directive - Attachment of supporting fitting components for turn-only and tilt&turn fittings with definitions for turn-only and tilt&turn fittings and their possible installation positions	R7

**The test ranges listed in the table are characterised by the test methods listed above.**

Type of Test	Test parameter within the limits	
Tensile testing machines	Force measurement	Force: 100 to 5000 N 2000 to 100000 N up to 400 mm
Callipers, measuring tapes	Displacement	Displacement/length: 0,01 to 10000 mm
FEM-calculation software „Stability“ (Finite Element Method)	Static parameters: - Deformation $\epsilon$ in (m/m) - Stress $\sigma$ in (N/m <sup>2</sup> )	



**1.5 Serviceability, material analyses, ageing behaviour due to material and environmental influences of accessories/building components \*\*\*  
e.g. varnish, paints, coatings, sealants, sealing profiles, insulating materials, adhesives,  
glass and glass composites, wood and wood materials, frame profile (material composite)**

DIN EN ISO 1463 2004-08	Metallic and oxide coatings - Measurement of coating thickness - Microscopical method	R7
DIN EN ISO 2360 2017-12	Non-conductive coatings on non-magnetic electrically conductive base metals - Measurement of coating thickness - Amplitude- sensitive eddy-current method	R7
DIN EN ISO 2409 2020-09	Paints and varnishes - Cross-cut test	R7
DIN EN ISO 2931 2018-04	Anodizing of aluminium and its alloys - Assessment of quality of sealed anodic oxidation coatings by measurement of admittance	R7
DIN EN ISO 7389 2004-04	Building construction - Jointing products - Determination of elastic recovery of sealants	R7
DIN EN ISO 7390 2004-04	Building and civil engineering sealants - Determination of adhesion/cohesion properties at constant temperature	R7
DIN EN ISO 8339 2005-09	Building construction - Sealants - Determination of tensile properties (Extension to break)	R7
DIN EN ISO 8340 2005-09	Building construction - Sealants - Determination of tensile properties at maintained extension	R7
DIN EN ISO 9046 2021-06	Building construction - Jointing products - Determination of adhesion/cohesion properties of sealants at constant temperature	R7
DIN EN ISO 9047 2016-02	Building construction - Jointing products - Determination of adhesion/cohesion properties of sealants at variable temperatures	R7
DIN EN ISO 10563 2017-09	Building construction - Sealants - Determination of change in mass and volume	R7

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DIN EN ISO 10590 2005-10	Building construction - Sealants - Determination of tensile properties of sealants at maintained extension after immersion in water	R7
DIN EN ISO 10591 2022-10	Building and civil engineering sealants - Determination of adhesion/cohesion properties of sealants after immersion in water	R7
DIN EN ISO 11432 2021-12	Building and civil engineering sealants - Determination of resistance to compression	R7
DIN EN ISO 12572 2017-05	Hygrothermal performance of building materials and products - Determination of water vapour transmission properties	R7
DIN EN 302-1 2013-06	Adhesives for load-bearing timber structures - Test methods - Part 1: Determination of bond strength in longitudinal tensile shear strength	R7
DIN EN 302-2 2017-11	Adhesives for load-bearing timber structures - Test methods - Part 2: Determination of resistance to delamination	R7
DIN EN 302-3 2013-06	Adhesives for load-bearing timber structures - Test methods - Part 3: Determination of the effect of acid damage to wood fibres by temperature and humidity cycling on the transverse tensile strength	R7
DIN EN 302-4 2013-06	Adhesives for load-bearing timber structures - Test methods - Part 4: Determination of the effects of wood shrinkage on the shear strength	R7
DIN EN 302-6 2013-06	Adhesives for load-bearing timber structures - Test methods - Part 6: Determination of the conventional pressing time	R7
DIN EN 302-7 2013-06	Adhesives for load-bearing timber structures - Test methods - Part 7: Determination of the conventional working life	R7
DIN EN 302-8 2017-05	Adhesives for load-bearing timber structures - Test methods - Part 8: Static load test of multiple bond line specimens in compression shear	R7
DIN EN 408 2012-10	Timber structures - Structural timber and glued laminated timber - Determination of some physical and mechanical properties	R7

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DIN EN 822 2013-05	Thermal insulating products for building applications - Determination of length and width	R7
DIN EN 823 2013-05	Thermal insulating products for building applications - Determination of thickness	R7
DIN EN 824 2013-05	Thermal insulating products for building applications - Determination of squareness	R7
DIN EN 825 2013-05	Thermal insulating products for building applications - Determination of flatness	R7
DIN EN 826 2013-05	Thermal insulating products for building applications - Determination of compression behavior	R7
DIN EN 927-6 2018-12	Paints and varnishes - Coating materials and coating systems for exterior wood - Part 6: Exposure of wood coatings to artificial weathering using fluorescent UV lamps and water	R7
DIN EN 1096-2 2012-04	Glass in building - Coated glass - Part 2: Requirements and test methods for class A, B and S coatings	R7
DIN EN 1096-3 2012-04	Glass in building - Coated glass - Part 3: Requirements and test methods for class C and D coatings	R7
DIN EN 1096-5 2016-06	Glass in building - Coated glass - Part 5: Test method and classification for the self-cleaning performances of coated glass surfaces	R7
DIN EN 1279-2 2018-10	Glass in building - Insulating glass units - Part 2: Long term test method and requirements for moisture penetration	R7
DIN EN 1279-3 2018-10	Glass in building - Insulating glass units - Part 3: Long term test method and requirements for gas leakage rate and for gas concentration tolerances	R7
DIN EN 1279-4 2018-10	Glass in building - Insulating glass units - Part 4: Methods of test for the physical attributes of edge seal components and inserts	R7

DIN EN 1279-6 2018-10 Corrected version 2021-05	Glass in building - Insulating glass units - Part 6: Factory production control and periodic tests	R7
DIN EN 1602 2013-05	Thermal insulating products for building applications - Determination of the apparent density	R7
DIN EN 12365-1 2003-12	Building hardware - Gaskets and weatherstripping for doors, windows, shutters and curtain walling - Part 1: Performance requirements and classification	R7
DIN EN 12365-2 2003-12	Building hardware - Gaskets and weatherstripping for doors, windows, shutters and curtain walling - Part 2: Linear compression force test methods	R7
DIN EN 12365-3 2003-12	Building hardware - Gaskets and weatherstripping for doors, windows, shutters and curtain walling - Part 3: Deflection recovery test method	R7
DIN EN 12365-4 2003-12	Building hardware - Gaskets and weatherstripping for doors, windows, shutters and curtain walling - Part 4: Recovery after accelerated ageing test method	R7
DIN EN 12431 2013-05	Thermal insulating products for building applications - Determination of thickness for floating floor insulating products	R7
DIN EN 14080 2013-09	Timber structures - Glued laminated timber and glued solid timber- Requirements	R7
DIN CEN/TS 13307-2 2010-03	Laminated and finger jointed timber blanks and semi-finished profiles for non-structural uses - Part 2: Production control	R7
DIN EN 15416-3 2017-05	Adhesives for load bearing timber structures other than phenolic and aminoplastic - Test methods - Part 3: Creep deformation test at cyclic climate conditions with specimens loaded in bending shear	R7

DIN EN 15416-4 2017-05	Adhesives for load bearing timber structures other than phenolic and aminoplastic - Test methods - Part 4: Determination of open assembly time for one component polyurethane adhesives	R7
DIN EN 15416-5 2017-05	Adhesives for load bearing timber structures other than phenolic and aminoplastic - Test methods - Part 5: Determination of conventional pressing time	R7
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	R7
DIN 18542 2020-04	Impregnated sealing tapes made of cellular plastics for sealing of outside wall joints - Requirements and testing	R7
DIN 68141 2016-12	Wood adhesives - Determination of properties of use of wood adhesives for load-bearing timber structures	R7
CEKAL-technical regulations	<b>CEKAL laboratory tests of IG units:</b> - ageing behaviour (according to pvi 131vi01 and pvi 131vi02) - dew point (according to pvi 131vi03 and pvi131vi032) - gas concentration (according to pvi 131vi04)	R7
ift- Guideline HO-10/1 2002-11	Solid, Finger-jointed and Laminated Profiles for Wooden Windows - Requirement and Testing	R7
ift- Guideline DI-01/1-1 2008-02	The usability of sealants - Part 1 - Testing of materials in contact with the edge-sealing of insulating glass units	R7
ift- Guideline DI-02/1-2 2009-03	The usability of sealants - Part 2 - Testing of materials in contact with the edge of laminated glass and laminated safety glass	R7
ift- Guideline VE-04/2 1998-09	Testing and assessment of abrasion and streaking of glazing sealants	R7
ift- Guideline VE-05/1 2002-11	Proof of the compatibility of glazing blocks with inert sealants from the insulating glass edge sealant	R7

ift- Guideline VE-07/3 2018-11	Insulating glass unit with movable sun protection systems integrated in the cavity; Evidence for evaluation of the fitness for use of insulating glass unit (IGU) with integrated movable installations;	R7
RAL-GZ 711 2017-08	Joint sealing components and systems - Quality assurance	R7

**The test ranges listed in the following table are characterised by the specified test methods.**

Type of test	Test parameter within the limits		Typical test methods
Cyclic climate conditions; Temperature / humidity	Temperature Relative humidity Temperature change; Velocity	-40 °C to + 85 °C 10% to 95 % r.H. ≤ 0,57 K/min	EN 1279-3 CEKAL laboratory tests of IG units
Constant climate Temperature/ humidity	Temperature Relative humidity	-40 °C to + 85 °C 10 % to 95 % r.H.	EN 1279-3 CEKAL laboratory tests of IG units EN 60068-2-78
Temperature Dry heat Cold(ness);	Temperature	-30 °C to + 100 °C +50 °C to +950 °C	EN ISO 12543-4 EN 14024 EN 60068-2-1 EN 60068-2-2
Radiation	Radiation intensity	50 to 1000 W/m <sup>2</sup>	EN ISO 12543 EN 1096
External exposure / radiation	Radiation intensity Schwarz-Standard Temperature Water temperature Radiation intensity UVA 320 nm	550 W/m <sup>2</sup> +65 °C 45 °C 0,89 W/m <sup>2</sup> nm	ETAG 002-1 EN ISO 11431 EN ISO 4892-2
Immersion in hot water	Temperature	+40 °C to +100 °C	ETAG 002-1 EN 204 ift - Guideline HO-10/1
Weighing balances	Mass	0,0001 g to 16.000 g	EN 1279-4 (TGA) EN 1279-2
Load with SO <sub>2</sub> atmosphere	Temperature Concentration	RT to +40 °C 0,2 l SO <sub>2</sub> to 2 litres of water	EN 1096-2 ETAG 002-1 EN ISO 3231 EN ISO 6988

Type of test	Test parameter within the limits		Typical test methods
Neutral salt spray atmosphere constant	Test cabinet temperature Test cabinet humidity Concentration of solution	5 K > RT to +35 °C 100 % r.H. 50 g NaCl / 1l water PH 6,5 to 7,2	EN ISO 9227
Film thickness	Eddy current	10 – 150 µm	ETAG 002-1 EN ISO 2360
Gas analysis	Gas chromatography	N2, O2, argon, krypton	EN 1279-3
Determination of the humidity	Karl-Fischer-Titration, annealing furnace	0,1% to 10 %	EN 1279-2

**1.5.1 Special test methods in the field of environmental simulation \*\***

DIN EN 60068-2-1 2008-01	Environmental testing - Part 2-1: Tests - Test A: Cold	R7
DIN EN 60068-2-52 1996-10	Environmental testing - Part 2: Tests, Test Kb: Salt mist, cyclic (sodium chloride solution)	R7
DIN EN 60068-2-75; VDE 0468-2-75 2015-08	Environmental testing - Part 2: Tests; test Eh: Hammer tests	R7
DIN EN 60068-2-78 2014-02	Environmental testing - Part 2-78 Tests - Test Cab: Damp heat, steady state	R7

**1.5.2. Separate corrosion tests \***

DIN EN ISO 9227 2017-07	Corrosion tests in artificial atmospheres - Salt spray tests	R7
DIN EN 1670 2007-06 + Berichtigung 1 2008-07	Building hardware - Corrosion resistance - Requirements and test methods; Corrigendum 1	R7

### **1.5.3 Separate test methods for heat, water and artificial light \***

DIN EN ISO 11431 2003-01	Building construction - Jointing products - Determination of adhesion/cohesion properties of sealants after exposure to heat, water and artificial light through glass	R7
DIN EN ISO 868 2003-10	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)	R7

## **2 Safety and security of construction products and accessories (e.g. windows, external and internal ped. doors, shutters, industrial, commercial and garage doors and gates, facades, non-load bearing external walls, glass/glazing, grilles, retrofitting products, as well as automatic/power operated construction products and their accessories**

### **2.1 Burglary resistance and impact resistance \*\***

ISO 7892 1988-08	Vertical building elements; impact resistance tests - impact bodies and general test procedures	R4
DIN EN 356 2000-02	Glass in building - Security glazing - Testing and classification of resistance against manual attack	R4
DIN EN 596 1996-07	Timber structures - Test methods - Soft body impact test of timber framed walls	R4
DIN EN 1288-1 2000-09	Glass in building - Determination of the bending strength of glass - Part 1: Fundamentals of testing glass	R4
DIN EN 1288-2 2000-09	Glass in building - Determination of the bending strength of glass - Part 2: Coaxial double ring test on flat specimens with large test surface areas	R4
DIN EN 1627 2021-11	Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Requirements and classification	R4
DIN EN 1628 2021-11	Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance under static loading	R4



DIN EN 1629 2021-11	Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance under dynamic loading	R4
DIN EN 1630 2021-11	Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts	R4
DIN EN 1998-1 2010-12 + A1:2013-05 + NA:2011-01	Eurocode 8: Design of structures for earthquake resistance - Part 1: General rules, seismic actions and rules for buildings; National Annex - Nationally determined parameters	OF14
DIN EN 12150-1 2020-07	Glass in building - Thermally toughened soda lime silicate safety glass - Part 1: Definition and description	R4 R7
DIN EN 12600 2003-04	Glass in building - Pendulum tests - Impact test method and classification for flat glass	R4
DIN EN 13024-1 2012-02	Glass in building - Thermally toughened borosilicate safety glass - Part 1: Definition and description	R4 R7
DIN EN 13049 2003-08	Windows - Soft and heavy body impact - Test method, safety requirements and classification	R7
DIN EN 14019 2016-11	Curtain Walling - Impact resistance - Performance requirements	R4 OF14
DIN EN 14321-1 2005-09	Glass in building - Thermally toughened alkaline earth silicate safety glass - Part 1: Definition and description	R7
DIN 18008-1 2020-05	Glass in Building - Design and construction rules - Part 1: Terms and general bases	R7
DIN 18008-4 2013-07	Glass in Building - Design and construction rules - Part 4: Additional requirements for barrier glazing	R4

DIN 18008-5 2013-07	Glass in Building - Design and construction rules - Part 5: Additional requirements for walk-on glazing	R4
DIN 18008-6 2018-02	Glass in building - Design and construction rules - Part 6: Additional requirements for walk-on glazing in case of maintenance procedures and for fall-through glazing	R4
DIN 18104-1 2017-08	Mechanical security devices - Part 1: Additional burglar resistant products for windows and doors - requirements and test methods	R4
DIN 18104-2 2021-12	Mechanical security devices - Part 2: Additional burglar resistant products for windows and doors - Requirements and test methods	R4
DIN/TS 18194 2020-07	Industrial, commercial and garage doors and gates - Burglar resistance - Requirements, testing and classification	R4
DIN 52338 2016-10	Test methods for flat glass in building - Ball drop test for laminated glass	R7
BG-GS-BAU-18 2020-05	Principles for the testing and certification of the fall-through safety of building components during construction or maintenance work	R4
BS 6206 1981-11	Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings	R4
NF P01-013 1988-08	Railings test - Methods and criteria	R4
NF P08-301 1991-01	Vertical building elements - Impact resistance tests - Impact bodies - Principle and general test procedures	R4
PAS 24 2016-02	Enhanced security performance requirements for doorsets and windows in the UK	R4

ASTM E987-88 (2009 reapproved)	Standard Test Methods for Deglazing Force of Fenestration Products	R4 R7 OF14
ASTM F588 2014	Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact	R4 R7
ASTM F842 2014	Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact	R4 R7
DIBt ETB-Richtlinie 1985-06	ETB Guideline "Structural components providing protection against falls from a height" (ETB-Richtlinie "Bauteile, die gegen Absturz sichern")	R4
RAL-RG 607-13 1996-06	Anti-jemmy hardware - Quality control	R4
ANSI Z 97.1 2015 (R2020)	Safety Glazing Materials Used in Buildings – Safety Performance Specifications and Methods of Tests	R7
AS 2047:2014-09 + A1:2016+A2 2017-06	Windows and external glazed doors in buildings	R7
AS/NZS 4284 2008-01	Testing of building facades	OF14
AS/NZS 4420-1:2016-12+Amd. 1 2019-10	Windows, external glazed, timber and composite doors - Methods of test - Test sequence, sampling and test methods	R7
ift-Guideline EL-02/1 2022-04	Building elements with mechatronic components; Testing and evaluation of the burglar resistance of building elements with electromechanical components and/or electronic means of authorisation.	R4

**The test ranges listed in the table are characterised by the test methods listed above.**

Type of test	Test parameter within the limits	
Dual tyre impactor Glass ball bag		Mass: Up to 400 kg

Type of test	Test parameter within the limits	
Sand bag Steel sphere Axe-impact Hammer-impact Weights	Assessment acc. to impacts, e.g by soft / hard body impacts;  Mass Drop height	Displacement: 1 – 10 000 mm

**2.2 Facility safety/operability security \***  
*(e.g. of automatic power operated building products and their accessories)*

ISO 21927-9 2012-03	Smoke and heat control systems - Part 9: Specification for control equipment	R4
DIN EN ISO 13849-2 2013-02	Safety of machinery - Safety-related parts of control systems - Part 2: Validation	R4
DIN EN 12101-10 2006-01 + Berichtigung 1 2009-07	Smoke and heat control systems - Part 10: Power supplies; Corrigendum 1	R4 R7

**2.3 Fire safety \*\***

**A. Primary fire characteristics**

- *Flammability*

DIN EN ISO 1182 2020-11	Reaction to fire tests for products - Non-combustibility test	OF21
DIN EN 13238 2010-06	Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware - Part 2: Fire resistance characterisation test for elements of building hardware	OF21
DIN 4102-1 1998-05	Fire behaviour of building materials and building components - Part 1: Building materials; concepts, requirements and tests	OF21

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- *Ignitability*

DIN EN ISO 11925-2 2020-07	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test	OF21
DIN 4102-7 2018-11	Fire behaviour of building materials and building components - Part 7: Roofing; definitions, requirements and testing tests	OF21
DIN 4102-15 1990-05	Fire behaviour of building materials and elements - Part 15: "Brandschacht" (fire shaft)	OF21
DIN 4102-16 2021-01	Fire behaviour of building materials and elements - Part 16: "Brandschacht" tests (fire shaft tests)	OF21
DIN 18089-1 1984-01	Fire barriers - fillers for fire-doors - mineral fibre boards (felts) - definition, designation, requirements, tests	OF21
DIN 50050-1 1986-04	Testing of materials; burning behaviour of materials; small burning cabinet	OF21
DIN 50051 1977-02	Testing of Materials; Burning Behaviour of Materials; Burner	OF21
ABM-Kolloquium (Niederschrift) 28, Anlage 1: 1983-02	Testing of rigid foam with and without final coating (Minutes 28, Annex 1	OF21
Prüfgrundsätze 1993-11	Testing principles for non-combustible building materials (Building materials class A1 according to DIN 4102-1)	OF21

- *Flame spread*

DIN EN 16733 2016-07	Reaction to fire tests for building products - Determination of a building product's propensity to undergo continuous smouldering	OF21
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- *Heat release*

DIN EN ISO 1716 2018-10	Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value)	OF21
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- *Melting behaviour, flaming droplets/particles*

DIN 4102-17 2017-12	Fire behaviour of building materials and elements - Part 17: Determination of melting point of mineral fibre insulating materials - concepts, requirements and testing;	OF21
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**B Fire side effects**

- *Optical density of smoke*

DIN EN 1634-3 2005-01 Berichtigung 1 2009-09	Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 3: Smoke control test for door and shutter assemblies; Corrigendum 1;	OF21 A
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DIN EN 12101-1 2006-06	Smoke and heat control systems - Part 1: Specification for smoke barriers	OF21
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DIN EN 12101-2 2003-09 + Rev. 2017-08	Smoke and heat control systems - Part 2: Natural smoke and heat exhaust ventilators	OF21
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DIN 18095-2 1991-03	Smoke control doors - Part 2: Type testing for durability and leakage	OF21 A
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DIN 18095-3 1999-06	Smoke control shutters - Part 3: Application of test results	OF21 A
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UL 1784 2015-02	UL Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives	OF21
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### **C. Component behaviour**

#### *- Resistance to fire*

ISO 3008-1 2019-01	Fire resistance tests - Door and shutter assemblies - Part 1: General requirements	OF21
ISO 3009 2003-11	Fire-resistance tests - Elements of building construction - Glazed elements	OF21
DIN EN 1363-1 2020-05	Fire resistance tests - Part 1: General requirements;	OF21
DIN EN 1363-2 1999-10	Fire resistance tests - Part 2: Alternative and additional procedures	OF21
DIN V ENV 1363-3: 1999-09	Fire resistance tests - Part 3: Verification of furnace performance	OF21
DIN EN 1364-1 2015-09	Fire resistance tests for non-loadbearing elements - Part 1: Walls	OF21
DIN EN 1364-2 2018-03	Fire resistance tests for non-loadbearing elements - Part 2: Ceilings	OF21
DIN EN 1364-3 2014-05	Fire resistance tests for non-loadbearing elements - Part 3: Curtain walling - Full configuration	OF21
DIN EN 1364-4 2014-05	Fire resistance tests for non-loadbearing elements - Part 4: Curtain walling - Part configuration	OF21
DIN EN 1364-5 2017-09	Fire resistance tests for non-loadbearing elements - Part 5: Air transfer grilles	OF21
DIN EN 1365-1 2013-08	Fire resistance tests for loadbearing elements - Part 1: Walls	OF21

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DIN EN 1365-2 2015-02	Fire resistance tests for loadbearing elements - Part 2: Floors and roofs ( <i>refers to EN 1363-1</i> )	OF21
DIN EN 1365-3 2000-02	Fire resistance tests for loadbearing elements - Part 3: Beams	OF21
DIN EN 1365-4 1999-10	Fire resistance tests for loadbearing elements – Part 4: Columns	OF21
DIN EN 1366-3 2022-05	Fire resistance tests for service installations - Part 3: Penetration seals	OF21
DIN EN 1366-4 2021-05	Fire resistance tests for service installations - Part 4: Linear joint seals	OF21
DIN EN 1366-7 2004-09	Fire resistance tests for service installations - Part 7: Conveyor systems and their closures	OF21
DIN EN 1634-1 2018-04	Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 1: Fire resistance test for door and shutter assemblies and openable windows	OF21
DIN EN 1634-2 2009-05	Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware - Part 2: Fire resistance characterisation test for elements of building hardware	OF21
BS 476 1987	Fire tests on building materials and structures	OF21
BS 476-20 1987	Fire tests on building materials and structures – Part 20: Method for determination of the fire resistance of elements of construction (general principles)	OF21
BS 476-22 1987	Fire tests on building materials and structures – Part 22: Methods for determination of the fire resistance of non-loadbearing elements of construction	OF21

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DIBt Prüfgrundlagen (Testing principles) 2013-06	Fire doors and shutters in the modified approval procedure; Test agreements between the DIBt and the approval testing bodies designated in the procedure	OF21
DIBt Prüfgrundlagen (Testing principles) 2014-10	Test agreements for the installation of fire doors and shutters in fire-resistant containers	OF21
DIBt Prüfgrundlagen (Testing principles) 2014-10	Test agreements for fire-resistant doors of inspection openings	OF21
DIBt Prüfgrundlagen (Testing principles) 2014-07	General requirements and test specifications for the approval procedure for hold-open systems	OF21
DIN EN 14470-1 2004-07	Fire safety storage cabinets - Part 1: Safety storage cabinets for flammable liquids	OF21
DIN EN 14470-2 2006-11	Fire safety storage cabinets - Part 2: Safety cabinets for pressurised gas cylinders	OF21
DIN 4102-2 1977-09	Fire Behavior of Building Materials and Building Components - Part 2: Building Components - Definitions, Requirements and tests	OF21
DIN 4102-5 1977-09	Fire Behavior of Building Materials and Building Components - Part 5: Fire Barriers, Barriers in Lift Wells and Glazings Resistant against Fire - Definitions, Requirements and tests	OF21
DIN 4102-8 2003-10	Fire behavior of building materials and components - Part 8: Small scale test furnace	OF21
DIN 4102-9 1990-05	Fire behavior of building materials and elements; seals for cable penetrations; concepts, requirements and testing	OF21
DIN 4102-11 1985-12	Fire behavior of building materials and building components - Part 11: Pipe encasements, pipe bushings, service shafts and ducts, and barriers across inspection openings; terminology, requirements and testing	OF21
DIN 4102-13 1990-05	Fire behavior of building materials and elements - Part 13: Fire resistant glazing; concepts, requirements and testing	OF21

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DIN 18093 2017-10	Fire barriers - installation of fire doors in fireproof masonry or concrete walls - position and shapes of anchorages, installation	OF21
UL 9 2009-07	UL Standard for Safety for Fire Tests of Window Assemblies	OF21
UL 10B 2008-02 (Rev2009)	UL Standard for Safety for Fire Tests of Door Assemblies	OF21
UL 10C 2016-06	UL Standard for Safety for Positive Pressure Fire Tests of Door Assemblies	OF21
UL 10D 2017-09	UL Standard for Fire Tests of Fire Protective Curtain Assemblies	OF21
UL 263 2011-06	UL Standard for Safety for Fire Tests of Building Construction and Materials	OF21
UL 1479 2015-06	UL Standard for Fire Tests of Penetration Firestops	OF21
ASTM E 119 16a 2016	American National Standard Test Methods for Fire Tests of Building Construction and Materials	OF21
ASTM E 2226 15b 2015	Standard Practice for Application of Hose Stream	OF21
ASTM E 814 13a 2013 (Reapproved 2017)	American National Standard Test Method for Fire Tests of Penetration Firestop Systems	OF21
UL 2079 2015-08	UL Standard for Tests for Fire Resistance of Building Joint Systems	OF21
DIBt-Regel (DIBt Rule) 2013-12	Approval principles for construction products which are used as insulating building materials in building components and types of construction	OF21
DIBt Prüfgrundlagen (Testing principles) October 2014	Testing and assessment principles SVA B3„Reaction to fire of construction products – Fire- resistant glazing“ of DIt, Berlin	OF21

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## D Component behaviour

### - Seat tests

DIN EN 1021-1 2014-10	Furniture - Assessment of the ignitability of upholstered furniture - Part 1: Ignition source smouldering cigarette	OF21
DIN EN 1021-2 2014-10	Furniture - Assessment of the ignitability of upholstered furniture - Part 2: Ignition source match flame equivalent	OF21

### In connection with:

<i>DIN EN 13501-1 2018-12</i>	<i>Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests</i>	<i>R7 OF21</i>
<i>DIN EN 13501-2 2016-12</i>	<i>Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services</i>	<i>R7, OF21</i>
<i>DIN EN 13501-4 2016-12</i>	<i>Fire classification of construction products and building elements - Part 4: Classification using data from fire resistance tests on components of smoke control systems</i>	<i>R7, OF21</i>
<i>DIN EN 13501-5 2016-12</i>	<i>Fire classification of construction products and building elements - Part 5: Classification using data from external fire exposure to roofs tests</i>	<i>R7, OF21</i>

<i>DIN EN 45545-1 2013-08</i>	<i>Railway applications - Fire protection on railway vehicles – Part 1: General</i>	<i>R7 OF14</i>
<i>DIN EN 45545-2 2013-08</i>	<i>Railway applications - Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components</i>	<i>R7 OF14</i>
<i>DIN EN 45545-3 2013-08</i>	<i>Railway applications - Fire protection on railway vehicles – Part 3: Fire resistance requirements for fire barriers</i>	<i>R7 OF14</i>

### **3 Building physics tests**

#### **3.1 Acoustic tests of construction products, building elements and buildings \*\*\***

DIN EN ISO 3382-2 2008-09 + Berichtigung 1 2009-09	Acoustics - Measurement of room acoustic parameters - Part 2: Reverberation time in ordinary rooms; + Corrigendum 1	R7 OF14
DIN EN ISO 717-1 2021-05	Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation	R7 OF14
DIN EN ISO 717-2 2021-05	Acoustics - Rating of sound insulation in buildings and of building elements - Part 2: Impact sound insulation	OF14
DIN EN ISO 9053-1 2019-03	Acoustics - Determination of airflow resistance - Part 1: Static airflow method	OF14
DIN EN ISO 10052 2021-11	Acoustics - Field measurements of airborne and impact sound insulation and of service equipment sound - Survey method	R7 OF14
DIN EN ISO 10140-1 2021-09	Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Application rules for specific products	R7 OF14
DIN EN ISO 10140-2 2021-09	Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation	R7 OF14

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DIN EN ISO 10140-3 2021-09	Acoustics - Laboratory measurement of sound insulation of building elements - Part 3: Measurement of impact sound insulation	OF14
DIN EN ISO 10140-4 2021-09	Acoustics - Laboratory measurement of sound insulation of building elements - Part 4: Measurement procedures and requirements	R7 OF14
DIN EN ISO 10140-5 2021-09	Acoustics - Laboratory measurement of sound insulation of building elements - Part 5: Requirements for test facilities and equipment	R7 OF14
DIN EN ISO 10848-1 2018-02	Acoustics - Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms - Part 1 Frame document  <i>(here: The flanking sound insulation will not be tested on suspended ceilings and access floors.)</i>	OF14
DIN EN ISO 10848-2 2018-02	Acoustics - Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms - Part 2: Application to light elements when the junction has a small influence; <i>(here: The flanking sound insulation will not be tested on suspended ceilings and access floors.)</i>	OF14
DIN EN ISO 10848-3 2018-02	Acoustics - Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms - Part 3: Application to light elements when the junction has a substantial influence	OF14
DIN EN ISO 12999-1 2021-04	Acoustics - Determination and application of measurement uncertainties in building acoustics - Part 1: Sound insulation	R7 OF14
DIN EN ISO 16283-1 2018-04	Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation	OF14
DIN EN ISO 16283-2 2020-11	Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 2: Impact sound insulation	OF14
DIN EN ISO 16283-3 2016-09	Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 3: Façade sound insulation	OF14

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DIN EN ISO 18233 2006-08	Acoustics - Application of new measurement methods in building and room acoustics	R7 OF14
DIN EN 12758 2019-12	Glass in building - Glazing and airborne sound insulation - Product descriptions and determination of properties	R7 OF14
DIN EN 16205 2021-02	Laboratory measurement of walking noise on floors	OF14
DIN EN 29052-1 1992-08	Acoustics - determination of dynamic stiffness - Part 1: materials used under floating floors in dwellings	OF14
DIN 4109-4 2016-07	Sound insulation in buildings - Part 4: Testing of acoustics in buildings	R7 OF14
Ift - Guideline LU-01/2 2021-07	Ventilation systems for windows - Part 1: Performance characteristics	R7 OF14

The test ranges listed in the following table are characterised by the specified test methods.

Type of test	Test parameter within the limits		
Acoustic test facilities, Multi-channel measuring system, Sound sources, Microphones etc.	- Normalized flanking level difference $D_{n,f}$	$D_{n,f}$ (dB) [0..100]	DIN EN ISO 10848-1
	- Weighted normalized flanking level difference $D_{n,f,w}$	$D_{n,f,w}$ (dB) [0..75] $D_{n,f,w}+C$ (dB) [0..75] $D_{n,f,w}+C_{tr}$ (dB) [0..75]	DIN EN ISO 10848-1 DIN EN ISO 717-1
	- Vibration reduction index $K_{i,j}$	$K_{ij}$ (dB) [0..60]	DIN EN ISO 10848-1
Acoustic test facilities, Multi-channel measuring system, Sound sources, Microphones etc .	- Sound pressure level	$L_{in}$ (dB(A)) [0..70]	DIN 4109-4
	- Normalized sound pressure level	$L_N$ (dB(A)) [0..70]	I ft - Guideline LU-01/2
Acoustic test facilities incl. multi-channel measuring system , Sound sources, Shaker, Vibration transducer etc.	- Reverberation time T	T(s) [0,1..10]	DIN EN ISO 3382-2
	- Structure-borne reverberation time	$T_s$ (s) [0,005..1]	DIN EN ISO 10848-1

Multi-channel measuring system, Sound sources, , Shaker, Vibration transducer etc. Pressure gauge & flow meter	- Air flow resistance $r$	$r$ (kPa·s/m <sup>2</sup> ) [3..50000]	DIN EN ISO 9053-1
	- Dynamic stiffness $s'$	$s'$ (MN/m <sup>3</sup> ) [0..100]	DIN EN 29052-1

	Type of test	Test parameter within the limits		
Acoustic test facilities, Multi-channel measuring system (acc. to DIN EN ISO 10140), Sound sources, Microphones etc.		- Sound reduction index $R$	$R$ (dB) [0..110]	DIN EN ISO 10140-2
		- Weighted sound reduction index $R_w$	$R_w$ (dB) [0..90] $R_w+C$ (dB) [0..90] $R_w+C_{tr}$ (dB) [0..90]	DIN EN ISO 10140-2 DIN EN ISO 717-1
		-Sound transmission class $STC$	$STC$ (dB) [0..90]	ASTM E413-16
		- Intensity sound reduction index $R_i$	$R_i$ (dB) [0..110]	DIN EN ISO 15186-1
		- Weighted intensity sound reduction index $R_{i,w}$	$R_{i,w}$ (dB) [0..90] $R_{i,w}+C$ (dB) [0..90] $R_{i,w}+C_{tr}$ (dB) [0..90]	DIN EN ISO 15186-1 DIN EN ISO 717-1)
		- Apparent sound reduction index $R'$ and/or $R'_{45^\circ}$	$R'$ , $R'_{45^\circ}$ (dB) [0..110]	DIN EN ISO 16283-1 DIN EN ISO 16283-3)
		- Weighted apparent sound reduction index $R'_w$ and/or $R'_{45^\circ,w}$	$R'_w$ (dB) [0..90] $R'_w+C$ (dB) [0..90] $R'_w+C_{tr}$ (dB) [0..90]	DIN EN ISO 16283-1 DIN EN ISO 16283-3 DIN EN ISO 717-1
		- Standardized level difference $D_{nT}$	$D_{nT}$ (dB) [0..110]	DIN EN ISO 16283-1
Acoustic test facilities, Multi-channel measuring system (acc. to DIN EN ISO 10140), Sound sources, Microphones etc .		- Weighted standardized level difference $D_{nT,w}$	$D_{nT,w}$ (dB) [0..90] $D_{nT,w}+C$ (dB) [0..90] $D_{nT,w}+C_{tr}$ (dB) [0..90]	DIN EN ISO 16283-1 DIN EN ISO 717-1
		- Joint sound reduction index $R_s$ (e.g.	$R_s$ (dB) [0..80]	DIN EN ISO 10140-1
		- Weighted joint sound reduction index $R_{s,w}$	$R_{s,w}$ (dB) [0..70] $R_{s,w}+C$ (dB) [0..70] $R_{s,w}+C_{tr}$ (dB) [0..70]	DIN EN ISO 10140-1 DIN EN ISO 717-1
		- Normalized level difference $D_{n,e}$	$D_{n,e}$ (dB) [0..100]	DIN EN ISO 10140-2
		- Weighted normalized level difference $D_{n,e,w}$	$D_{n,e,w}$ (dB) [0..100] $D_{n,e,w}+C$ (dB) [0..100] $D_{n,e,w}+C_{tr}$ (dB)[0..100]	DIN EN ISO 10140-2 DIN EN ISO 717-1
		- Improved sound reduction index $\Delta R$	$\Delta R$ (dB) [0..100]	DIN EN ISO 10140-1
		- Improved weighted sound reduction index $\Delta R_w$	$\Delta R_w$ (dB) [0..60] $\Delta(R_w+C)$ (dB) [0..60] $\Delta(R_w+C_{tr})$ [0..60]	DIN EN ISO 10140-1 DIN EN ISO 717-1

	Type of test	Test parameter within the limits		
	Acoustic test facilities, Multi-channel measuring system, Sound sources, Microphones etc.	- Normalized impact sound pressure level $L_n$	$L_n(\text{dB}) [0..100]$	DIN EN ISO 10140-3
		- Weighted normalized impact sound pressure level $L_{n,w}$	$L_{n,w}(\text{dB}) [0..100]$ $L_{n,w}+C_i(\text{dB}) [0..100]$	DIN EN ISO 10140-3 DIN EN ISO 717-2
		- Reduction of impact sound pressure level $\Delta L$	$\Delta L(\text{dB}) [0..70]$	DIN EN ISO 10140-1
		- Weighted reduction of impact sound pressure level $\Delta L_w, \Delta L_{t,w}$	$\Delta L_w(\text{dB}) [0..50]$ $\Delta L_w+C_{i,\Delta}(\text{dB}) [0..50]$ $\Delta L_{t,w}(\text{dB}) [0..50]$ $\Delta L_{t,w}+C_{i,\Delta,t}(\text{dB}) [0..50]$	DIN EN ISO 10140-1 DIN EN ISO 717-2
		- Field normalized impact sound pressure level $L'_n$	$L'_n(\text{dB}) [0..100]$	DIN EN ISO 16283-2
		- Field weighted normalized impact sound pressure level $L'_{n,w}$	$L'_{n,w}(\text{dB}) [0..100]$ $L'_{n,w}+C_i(\text{dB}) [0..100]$	DIN EN ISO 16283-2 DIN EN ISO 717-2
		- Standardized impact sound pressure level $L'_{nT}$	$L'_{nT}(\text{dB}) [0..100]$	DIN EN ISO 16283-2
		- Weighted standardized impact sound pressure level $L'_{nT,w}$	$L'_{nT,w}(\text{dB}) [0..100]$ $L'_{nT,w}+C_i(\text{dB}) [0..100]$	DIN EN ISO 16283-2 DIN EN ISO 717-2
		- Normalized impact sound pressure level $L_{n,f}$	$L_{n,f}(\text{dB}) [0..100]$	DIN EN ISO 10848-1
		- Weighted normalized impact sound pressure level $L_{n,f,w}$	$L_{n,f,w}(\text{dB}) [0..100]$ $L_{n,f,w}+C_i(\text{dB}) [0..100]$	DIN EN ISO 10848-1 DIN EN ISO 717-2

### 3.2 Thermal insulation, climate technology, light and radiation technology of construction products, building components and accessories \*\*\*

#### 3.2.1 Thermal insulation, climate technology

ISO 8301 1991-08 +A1 :2010-08	Thermal insulation; determination of steady-state thermal resistance and related properties; heat flow meter apparatus	R7
ISO 8302 1991-08	Thermal insulation; determination of steady-state thermal resistance and related properties; guarded hot plate apparatus	R7
ISO 9050 2003-08	Glass in building - Determination of light transmittance, solar direct transmittance, total solar energy transmittance, ultraviolet transmittance and related glazing factors	R7

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ISO 9869-1 2014-08	Thermal insulation - Building elements - In-situ measurement of thermal resistance and thermal transmittance - Part 1: Heat flow meter method	R7
DIN EN ISO 6946 2018-04	Building components and building elements - Thermal resistance and thermal transmittance - Calculation method	R7
DIN EN ISO 8990 1996-09	Thermal insulation - Determination of steady-state thermal transmission properties - Calibrated and guarded hot box	R7
DIN EN ISO 10077-1 corrected version 2020-10	Thermal performance of windows, doors and shutters Calculation of thermal transmittance - Part 1: General	R7
DIN EN ISO 10077-2 2018-01	Thermal performance of windows, doors and shutters – Calculation of thermal transmittance - Part 2: Numerical method for frames	R7
DIN EN ISO 10211 2018-03	Thermal bridges in building construction - Heat flows and surface temperatures - Detailed calculations	R7
DIN EN ISO 10456 2010-05	Building materials and products - Hygrothermal properties - Tabulated design values and procedures for determining declared and design thermal values	R7
DIN EN ISO 12567-1 2010-12	Thermal performance of windows and doors - Determination of R thermal transmittance by the hot-box method - Part 1: Complete windows and doors	R7
DIN EN ISO 12567-2 2006-03	Thermal performance of windows and doors - Determination of thermal transmittance by hot box method - Part 2: roof windows and other projecting windows	R7
DIN EN ISO 12631 2018-01	Thermal performance of curtain walling - Calculation of thermal transmittance	R7
DIN EN ISO 13370 2018-03	Thermal performance of buildings - Heat transfer via the ground - Calculation methods	R7

DIN EN ISO 13788 2013-05	Hygrothermal performance of building components and building elements – Internal surface temperature to avoid critical surface humidity and interstitial condensation – Calculation methods	R7
DIN EN ISO 14683 2018-03	Thermal bridges in building construction - Linear thermal transmittance - Simplified methods and default values	R7
DIN EN 673 2011-04	Glass in building - Determination of thermal transmittance (U value) - Calculation method	R7
DIN EN 674 2011-09	Glass in building - Determination of thermal transmittance (U value) - Guarded hot plate method	R7
DIN EN 1121 2000-09	Doors - Behaviour between two different climates - Test method	R7
DIN EN 1873 2014-08 DIN EN 1873 2016-07	Prefabricated accessories for roofing - Individual roof lights of plastics - Product specification and test methods - Annex D	R7
DIN EN 12412-2 2003-11	Thermal performance of windows, doors and shutters - Determination of thermal transmittance by hot box method - Part 2: Frames	R7
DIN EN 12412-4 2003-11	Thermal performance of windows, doors and shutters - Determination of thermal transmittance by hot box method - Part 4: Roller shutter boxes	R7
DIN EN 12428 2013-04	Industrial, commercial and garage doors- Thermal transmittance - Requirements for the classification	R7
DIN EN 12664 2001-05	Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Dry and moist products with medium and low thermal resistance	R

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	R7
DIN EN 13125 2001-10	Shutters and blinds - Additional thermal resistance - Allocation of a class of air permeability to a product	R7
DIN EN 13241 2016-12	Industrial, commercial, garage doors and gates - Product standard, performance characteristics - Annex B	R7
DIN EN 13420 2011-07	Windows - Behaviour between different climates - Test method	R7
DIN EN 14315-1 2013-04	Thermal insulating products for buildings - In-situ formed sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR) foam products - Part 1: Specification for the rigid foam spray system before installation	R7
DIN EN 14315-2 2013-04	Thermal insulating products for buildings - In-situ formed sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR) foam products - Part 2: Specification for the installed insulation products	R7
DIN EN 15976 2011-07	Flexible sheets for waterproofing - Determination of emissivity	R7
DIN EN 16012 2015-05	Thermal insulation for buildings - Reflective insulation products - Determination of the declared thermal performance	R7
DIN EN 16580 2015-10	Windows and doors - Wetness and splash water proof door leaves - Test and classification	R7
DIN EN 17333-5 2020-07	Characterisation of one component foam - Part 5: Insulation	R7
DIN 4108-2 2013-02	Thermal protection and energy economy in buildings - Part 2: Minimum requirements for thermal insulation	R7

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DIN 4108-3 2018-11	Thermal protection and energy economy in buildings - Part 3: Protection against moisture subject to climate conditions - Requirements and directions for design and construction	R7
DIN 4108-4 2020-11	Thermal insulation and energy economy in buildings – Part 4: Hygrothermal design values	R7
DIN 4108-7 2011-01	Thermal insulation and energy economy in buildings - Part 7: Air tightness of buildings - Requirements, recommendations and examples for planning and performance	R7
DIN 4108-10 2021-11	Thermal insulation and energy economy in buildings - Part 10: Application-related requirements for thermal insulation materials	R7
DIN 4108 Supplement 2 2019-06	Thermal insulation and energy economy in buildings thermal bridges - Examples for planning and performance	R7
DIN-Technical Report 4108-8 2010-09	Thermal insulation and energy economy in buildings - Part 8: Avoidance of mould growth in residential buildings	R7
Ift-AA 1911-WÄR09 2011-08	Measuring the calorimetric g-value	R7
ift-AA 1913-WÄR11 2011-08	ift-in-house method for condensation water - Determination of the condensation behaviour	R7
ift-Guideline VE-08/4 2017-03	Basis for the evaluation of direct glazing systems Part 1 Characterisation of direct glazing systems Part 2 Tests of window systems (building components) Part 3 Compatibility Part 4 Quality assurance Part 5 Supplement to Part 1: Direct glazing to laminated wood	R7
ift-Guideline FE-13/1 2011-04	Suitability of PVC profiles for windows Testing and classification	R7
ift-Guideline WA-01/2 2005-02	Uf-values for thermal break metal profiles of window systems	R7

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ift-Guideline WA-02/4 2015-10	Uf-values for PVC profile sections of window systems	R7
ift-Guideline WA-03/3 2005-02	Uf-values for thermal break metal profiles of facade systems - Guideline to determine the Uf-values of thermal break metal profile sections of facade systems	R7
ift-Guideline WA-05/2 2012-08	Evaluation of calculation programmes - Method for plausibility check of programmes to calculate the UW-values of windows, the UD-values of pedestrian doors and industrial, commercial doors and the UCW-values of curtain walls	R7
ift-Guideline WA-08/3 2015-02	Thermally improved spacers – Part 1: Determination of representative values for profile sections of windows	R7
ift-Guideline WA-13/1 2010-09	Psi-values of curtain walling - Determination of linear thermal transmittance (Psi-values) of curtain walling in combination with various infill panels (IGU units, panels and mounting frames)	R7
ift-Guideline WA-15/2 2011-02	Suitability of windows, external pedestrian doors and curtain walling for passive houses - Procedure and criteria for assessing the suitability of construction products for windows, external pedestrian doors and curtain walling for passive houses on the basis for European standards	R7
ift-Guideline WA-17/1 2013-02	Thermally improved spacers - Part 2: Determination of the equivalent thermal conductivity by means of measurement	R7
ift-Guideline WA-22/2 2016-08	Thermally improved spacers - Part 3: Determining the representative Psi-values of facade profiles	R

**The test ranges listed in the following table are characterised by the specified test methods.**

Type of test	Test parameter within the limits		Typical test method
Transmission of heat	Thermal transmittance U	U [0,1..10] W / m <sup>2</sup> K	EN 12412-2
	Thermal resistance R	R [5..0,01] m <sup>2</sup> K / W ΔR [5..0,01] m <sup>2</sup> K / W	EN 12412-4 EN ISO 12567-1 EN ISO 12567-2
	Linear thermal bridge Ψ	Ψ [0..1] W / mK	EN 673, EN 674 EN 675

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DIN EN ISO 52022-1 2018-01	Energy performance of buildings - Thermal, solar and daylight properties of building components and elements - Part 1: Simplified calculation method of the solar and daylight characteristics for solar protection devices combined with glazing (ISO 52022-1:2017)	R7
DIN CEN ISO/TR 52022-2 2017	Energy performance of buildings - Thermal, solar and daylight properties of building components and elements - Part 2: Explanation and justification (ISO/TR 52022-2:2017)	R7
DIN EN ISO 52022-3 2018-01	Energy performance of buildings - Thermal, solar and daylight properties of building components and elements - Part 3: Detailed calculation method of the solar and daylight characteristics for solar protection devices combined with glazing (ISO 52022-3:2017).	R7
DIN EN 410 2011-04	Glass in building - Determination of luminous and solar characteristics of glazing	R7
DIN EN 12898 2019-06	Glass in building - Determination of the emissivity	R7
DIN EN 14500 2021-09	Blinds and shutters - Thermal and visual comfort - Test and calculation methods	R7
DIN EN 15976 2011-07	Flexible sheets for waterproofing - Determination of emissivity	R7
DIN 5036-3 1979-11	Radiometric and photometric properties of materials; methods of measurement for photometric and spectral radiometric characteristics	R7
DIN 5036-4 1977-08	Radiometric and photometric properties of materials; classification	R7
CIE 38 1977	Radiometric and photometric characteristics of materials and their measurement	R7
CIE 130 1998	Practical methods for the measurement of reflectance and transmittance	R7

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The test ranges listed in the following table are characterised by the test methods listed above.

	Type of test	Test parameter within the limits	
	UV VIS NIR Spectrophotometer	Spectral transmittance $\tau(\lambda)$	280 to 2500 nm
		Spectral reflectance $\rho(\lambda)$	280 to 2500 nm
	Photometer with integrating sphere ( $\varnothing = 1,25\text{ m}$ )	Integral light transmittance $\tau_v$	$\tau_v$ standard illuminant D65 and A
		Integral light reflectance $\rho_v$	$\rho_v$ standard illuminant D65 and A
	Diode array spectrometer with integrating sphere ( $\varnothing = 1,25\text{m}$ )	Spectral transmittance $\tau(\lambda)$	310 to 1690 nm
		Spectral reflectance $\rho(\lambda)$	310 to 1690 nm
	FT IR Spectrometer	Directional spectral transmittance $\tau(\lambda)$	5 $\mu\text{m}$ to 50 $\mu\text{m}$
		Directional spectral reflectance $\rho(\lambda)$	5 $\mu\text{m}$ to 50 $\mu\text{m}$
	Integral emissivity meter (TIR)	Integral emissivity $\epsilon$ (Maximum at 8 $\mu\text{m}$ )	8 $\mu\text{m}$
	Calculation-software	Radiation and luminous characteristics such as  Ultraviolet transmittance $\tau_{UV}$ Light transmittance $\tau_v$ Radiation transmittance $\tau_e$ Radiation reflectance $\rho_e$ Light reflectance $\rho_v$ Standard emissivity $\epsilon_n$ Secondary heat transfer factor $q_i$ Total solar energy transmittance $g$ Colour rendering index $R_a$	Calculation of measured results $\tau(\lambda)$ and $\rho(\lambda)$



**4. Testing of construction products (System 3 for the assessment and verification of constancy of performance) in accordance with the Regulation (EU) No. 305/2011 to defined harmonised conditions for the marketing of construction products (Construction Products Regulation - CPR)**

Decisions / resolutions of the Commission	System <sup>1)</sup>	Technical Specification
<b>1996/580/EC</b> <b>2001/596/EC</b> Curtain wallings	3	<b>EN 13830:2003</b> Curtain walling – Product standard
<b>1997/176/EC</b> Structural timber products and ancillaries	3	<b>EAD 140022-00-0304</b> Pre-fabricated wood-based loadbearing stressed skin panels
<b>1997/462/EC</b> <b>2001/596/EC</b> Wood-based panels	3	<b>EN 13986:2004 + A1:2015</b> Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking
<b>1998/213/EC</b> Internal partition kits	3	<b>EAD 210005-00-0505</b> internalpartition kits for use as non-loadbearing walls
<b>1998/436/EC</b> <b>2001/596/ EC</b> Roof coverings, rooflights, roof windows and ancillaryproducts	3	<b>EN 1873:2005</b> Prefabricated accessories for roofing - Individual roof lights of plastics - Product specification and test methods
		<b>EN 14963:2006</b> Roof coverings - Continuous rooflights of plastics with or without upstands - Classification, requirements and test methods
		<b>EAD 320001-00-0605</b> Joint sealing tape on basis of a pre-compressed flexible polyurethane foam for sealing around windows and joints in building facades
<b>1998/437/EC</b> <b>2001/596/EC (L 209)</b> Internal and external wall and ceiling finishes	3	<b>EN 15102:2007+A1:2011</b> Decorative wallcoverings - Roll and panel form
<b>1998/600/EC</b> Self-supporting translucent roof kits (except glass-based kits)	3	<b>EAD 220089-00-0401</b> Self-supporting translucent roof kits with covering made of plastic sheets

Decisions / resolutions of the Commission	System <sup>1)</sup>	Technical Specification
<b>1999/90/EC</b> Membranes (2/3): - Damp proofing sheets	3	<b>EN 13984:2013</b> Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics

<b>1999/91/EC</b> Thermal insulation products	3	<b>EN 13162:2012 + A1:2015</b> Thermal insulation products for buildings - Factory made mineral wool (MW) products – Specification
		<b>EN 13163:2012 + A1:2015</b> Thermal insulation products for buildings - Factory made expanded polystyrene (EPS) products - Specification
		<b>EN 13164:2012 + A1:2015</b> Thermal insulation products for buildings - Factory made extruded polystyrene foam (XPS) products - Specification
		<b>EN 13165:2012 + A2:2016</b> Thermal insulation products for buildings - Factory made rigid polyurethane foam (PU) products - Specification
		<b>EN 13166:2012 + A2:2016</b> Thermal insulation products for buildings - Factory made phenolic foam (PF) products - Specification;
		<b>EN 13167:2012 + A1:2015</b> Thermal insulation products for buildings - Factory made cellular glass (CG) products - Specification
		<b>EN 13168:2012 + A1:2015</b> Thermal insulation products for buildings - Factory made wood wool (WW) products - Specification
	3	<b>EN 13169:2012 + A1:2015</b> Thermal insulation products for buildings - Factory made expanded perlite board (EPB) products - Specification
	3	<b>EN 13171:2012 + A1:2015</b> Thermal insulation products for buildings - Factory made wood fibre (WF) products - Specification

<p><b>1999/93/EC (2011/246/EU)</b>          Ped. doors, windows, shutters, blinds, ind., comm. and garage doors and gates and related building hardware</p>	<p>3</p>	<p><b>EN 14351-1:2006+A2:2016</b>          Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets</p> <p><b>EN 14351-2:2018<sup>2)</sup></b>          Windows and doors - Product standard, performance characteristics - Part 2: Internal pedestrian doorsets</p> <p><b>EN 13241:2003+A2:2016</b>          Industrial, commercial, garage doors and gates - Product standard, performance characteristics</p> <p><b>EN 16361:2013 + A1:2016</b>          Power operated pedestrian doors - Product standard, performance characteristics - Pedestrian doorsets, other than swing type, initially designed for installation with power operation</p>
<p><b>2000/245/EC 2001/296/EC</b>          Flat glass, profiled glass and glass-block products</p>	<p>3</p>	<p><b>EN 572-9:2004</b>          Glass in building - Basic soda lime silicate glass products - Part 9: Evaluation of conformity/Product standard</p> <p><b>EN 1096-4:2018</b>          Glass in building - Coated glass - Part 4: Product standard</p> <p><b>EN 1279-5:2005+A2:2018</b>          Glass in building - Insulating glass units - Part 5: Product standard</p> <p><b>EN 1748-1-2:2004</b>          Glass in building - Special basic products - Part 1-2: Borosilicate glasses; Evaluation of conformity/Product standard</p> <p><b>EN 1748-2-2:2004</b>          Glass in building - Special basic product - Part 2-2: Glass ceramics - Evaluation of conformity/Product standard</p> <p><b>EN 1863-2:2004</b>          Glass in building - Heat strengthened soda lime silicate glass - Part 2: Evaluation of conformity/Product standard</p> <p><b>EN 12150-2:2004</b>          Glass in building - Thermally toughened soda lime silicate safety glass - Part 2: Evaluation of conformity/Product standard</p>

<p><b>2000/245/EC</b>  <b>2001/296/EC</b>                  Flat glass, profiled glass and glass-block products</p>	<p>3</p>	<p><b>EN 12337-2:2004</b>                      Glass in building - Chemically strengthened soda lime silicate glass - Part 2: Evaluation of conformity/Product standard</p>
		<p><b>EN 13024-2:2004</b>                      Glass in building - Thermally toughened borosilicate safety glass - Part 2: Evaluation of conformity/Product standard</p>
		<p><b>EN 14178-2:2004</b>                      Glass in Building - Basic alkaline earth silicate glass products - Part 2: Evaluation of conformity/Product standard</p>
		<p><b>EN 14179-2:2005</b>                      Glass in building - Heat soaked thermally toughened soda lime silicate safety glass - Part 2: Evaluation of conformity/Product standard</p>
		<p><b>EN 14321-2:2005</b>                      Glass in building - Thermally toughened alkaline earth silicate safety glass - Part 2: Evaluation of conformity/Product standard</p>
		<p><b>EN 14449:2005+AC:2005</b>                      Glass in building - Laminated glass and laminated safety glass                      - Evaluation of conformity/Product standard</p>
<p><b>2000/447/EC</b>                  Prefabricated wood- based load-bearing stressed skin panels and self-supporting composite lightweight panels</p>	<p>3</p>	<p><b>ETAG 016-1:2003</b>                      Guideline for European technical approval of self-supporting composite light weight panels - Part 1: General</p>
		<p><b>ETAG 016-2:2003</b>                      Guideline for European technical approval of self-supporting composite light weight panels - Part 2: Specific aspects relating to self-supporting composite lightweight panels for use in roofs</p>
		<p><b>ETAG 016-3:2005</b>                      Guideline for European technical approval of self-supporting composite light weight panels - Part 3: Specific aspects relating to self-supporting composite lightweight panels for use in external walls and ceilings</p>

<p><b>2000/447/EC</b>                  Prefabricated wood- based load-bearing stressed skin panels and self-supporting composite lightweight panels</p>	<p>3</p>	<p><b>ETAG 016-4:2004</b>                  Guideline for European technical approval of self-supporting composite lightweight panels - Part 4: Specific aspects relating to self-supporting composite lightweight panels for use in internal walls and ceilings</p>
<p><b>2011/19/EC</b>                  Sealants for non- structural use in joints in buildings and pedestrian walkways</p>	<p>3</p>	<p><b>EN 15651-1: 2012</b>                  Sealants for non-structural use in joints in buildings and pedestrian walkways - Part 1: Sealants for facade elements</p> <p><b>EN 15651-2: 2012</b>                  Sealants for non-structural use in joints in buildings and pedestrian walkways - Part 2: Sealants for glazing</p> <p><b>EN 15651-3: 2012</b>                  Sealants for non-structural use in joints in buildings and pedestrian walkways - Part 3: Sealants for sanitary joints</p> <p><b>EN 15651-4: 2012</b>                  Sealants for non-structural use in joints in buildings and pedestrian walkways - Part 4: Sealants for pedestrian walkways</p>

<sup>1</sup>)System for assessment and verification of constancy of performance;

<sup>2</sup>)Decision and harmonisation of the standard pending (foreseen as System: 3)

*The requirements of testing laboratory in accordance with Article 43 of the Construction Products Regulation are fulfilled. Test methods which are necessary for the determination of the product type and which cannot be carried out by the certificate holder himself are included in the list of subcontractors (applies only to construction products in Chapter 4).*

*The test laboratory is permitted to use various revisions of the harmonised technical specifications without the prior consent of “Deutsche Akkreditierungsstelle GmbH”.*

**5 Testing of reaction to fire, resistance to fire, external fire performance and acoustic performance of construction products, for which the reference to a relevant harmonised technical specification is not required (Clause 3. Annex V, (EU) no. 305/2011)**

**5.1 Reaction to fire**

EN ISO 1182 2020	Reaction to fire tests for products - Non-combustibility test	OF21
EN ISO 1716 2010	Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value)	OF21
EN ISO 9239-1 2010	Reaction to fire tests for floorings - Part 1: Determination of the burning behaviour using a radiant heat source	OF21
EN ISO 11925-2 2020	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (	OF21

**5.2 Resistance to fire**

EN 1364-1 2015	Fire resistance tests for non-loadbearing elements - Part 1: Walls	OF21
EN 1364-2 2018	Fire resistance tests for non-loadbearing elements - Part 2: Ceilings	OF21
EN 1364-3 2014	Fire resistance tests for non-loadbearing elements - Part 3: Curtain walling - Full configuration	OF21
EN 1364-4 2014	Fire resistance tests for non-loadbearing elements – Part 4: Curtain walling - Part configuration	OF21
EN 1365-2 2015	Fire resistance tests for loadbearing elements - Part 2: Floors and roofs	OF21
EN 1366-3 2021	Fire resistance tests for service installations - Part 3: Penetration seals	OF21
EN 1634-1 2018	Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 1: Fire resistance test for door and shutter assemblies and openable windows	OF21

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EN 1634-2 2009-05	Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware - Part 2: Fire resistance characterisation test for elements of building hardware	OF21
EN 1634-3 2005+AC:2006	Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 3: Smoke control test for door and shutter assemblies + Corrigendum	OF21

### **5.3 Acoustic performance**

EN ISO 10140-1 2021	Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Application rules for specific products	R7 OF14
EN ISO 10140-3 2021	Acoustics - Laboratory measurement of sound insulation of building elements - Part 3: Measurement of impact sound insulation	OF14

*The requirements of testing laboratory in accordance with Article 43 of the Construction Products Regulation are fulfilled.*

#### **Abbreviations used:**

AAMA	American Architectural Manufacturers Association
ASTM	American Society for Testing and Materials
CWCT	Centre for Window and Cladding Technology
DIBt	Deutsches Institut für Bautechnik (German Institute for Civil Engineering and Construction)
DIN	Deutsches Institut für Normung e.V. (German Institute for Standardisation)
EAD	European Assessment Document
EN	European standard
ETAG	European Technical Approval Guidelines (used as EAD)
ift-Guideline	Guidelines of the "Institute for windows technology" (ift Rosenheim in-house method)
ISO	International Organization for Standardization
RAL (RG/GZ)	Gütegemeinschaften des Deutschen Instituts für Gütesicherung u. Kennzeichnung e.V. (Association of German Institute for Quality Control and Marking)
SVA	Sachverständigenausschuss (Experts Committee)
TBDK	Richtlinie der Gütegemeinschaft Schlösser und Beschläge e.V. (Guidelines from the Association of Locks and Fittings)

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