

Accreditation



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

Technische Universität München

with its testing laboratory

Materialprüfungsamt für das Bauwesen Arcisstraße 21, 80333 München

meets the requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment activities listed in the annex to this certificate. This includes additional existing legal and normative requirements for the testing laboratory, including those in relevant sectoral schemes, provided they are explicitly confirmed in the annex to this certificate

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.

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 notices of 04.04.2023 with accreditation number D-PL-14063-03.

It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 13 pages.

Registration number of the accreditation certificate: **D-PL-14063-03-00**

Berlin, 04.04.2023

Dipl.-Ing. Evelyn Körner
Head of Technical Unit

04.04.2023



Dipl.-Ing. Evelyn Körner
Head of Technical Unit

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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-14063-03-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 04.04.2023

Date of issue: 04.04.2023

Holder of accreditation certificate:

Technische Universität München

with its testing laboratory

**Materialprüfungsamt für das Bauwesen
Arcisstraße 21, 80333 München**

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 confirm generally with the principles of DIN EN ISO 9001.

With the locations:

**Franz-Langinger-Str. 10, 81245 München
Theresienstraße 90, 80333 München**

Tests in the fields:

**Mechanical-technological investigations of steels (reinforcing steel, pre-stressing steel);
Determination of the geometry, strength and deformation characteristics, fatigue behaviour,
corrosion resistance, relaxation behaviour, bonding behaviour and welding suitability, as well as
investigations of special questions relating to reinforcing steel, pre-stressing steel and reinforcing
steel connecting elements, tendons, cable stays;**

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>.

Annex to the Accreditation Certificate D-PL-14063-03-00

Mechanical-technological and physical testing of fresh and hardened concrete, cellular and lightweight aggregate concrete, steel fibre concrete, gunned concrete and concrete in buildings;

Testing of adhesive materials for wood construction elements for the building products: timber, glued solid wood materials (glued laminated timber, glued solid timber, cross-laminated timber, finger jointed solid wood), wooden materials, pre-fabricated glued and mechanically joined wooden and wood-based material panels, trussed girders, composite components, load-bearing floorings; of construction kits: construction kits for wood frame construction, modular design;

Testing of sealing sheets, including the determination of watertightness, water permeability, and resistance to water permeation, and testing of waterproofing, such as polymer-enhanced bitumen thick coating;

Testing of building products within the scope of the Directive (EU) no. 305/2011 for the definition of harmonised conditions for the marketing of construction products (Construction Product Regulation)

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkKS, to use standards or equivalent testing methods listed here with different issue dates.

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

The testing methods are identified with the symbols below, according to the sites where the testing was performed:

P = Pasing, Franz-Langinger-Str. 10, 81245 München

S = Stammgelände (Main site), Theresienstraße 90, 80333 München

Content

| | | |
|-----|---|----|
| 1 | Mechanical-technological investigations of steels (reinforcing steel, pre-stressing steel), tendons, cables and fibre-reinforced plastics..... | 3 |
| 2 | Mechanical-technological and physical testing of fresh and hardened concrete, cellular and lightweight aggregate concrete, steel fibre concrete, gunned concrete and concrete in buildings. | 5 |
| 3 | Testing of building products for timber construction, including adhesive materials for load-bearing timber structures..... | 6 |
| 3.1 | Adhesive materials for timber structures..... | 6 |
| 3.2 | Structural timber, glued solid wood materials..... | 7 |
| 3.3 | Wooden materials..... | 10 |
| 3.4 | Other..... | 10 |
| 4 | Testing of sealings and sealing sheets..... | 11 |
| 5 | Testing of construction products (system of assessment and verification of constancy of performance 3) within the scope of the Regulation (EU) No 305/2011 laying down harmonised conditions for the marketing of construction products (Construction Products Regulation)..... | 12 |

Valid from: 04.04.2023

Date of issue: 04.04.2023

Annex to the Accreditation Certificate D-PL-14063-03-00

1 Mechanical-technological investigations of steels (reinforcing steel, pre-stressing steel), tendons, cables and fibre-reinforced plastics

| | | |
|-------------------------------|--|-------------|
| ISO 15835-2 2018-10 | Steels for the reinforcement of concrete - Reinforcement couplers for mechanical splices of bars - Part 2: Test methods | P,S |
| DIN ISO 7801 2008-10 | Metallic Materials - Wire - Reverse bend test | P |
| DIN EN ISO 6506-1 2015-02 | Metallic materials - Brinell hardness test - Part 1: Test method | S |
| DIN EN ISO 6507-1 2018-07 | Metallic materials - Vickers hardness test - Part 1: Test method | S |
| DIN EN ISO 6508-1 2016-12 | Metallic materials - Rockwell hardness test - Part 1: Test method | S |
| DIN EN ISO 6892-1 2020-06 | Metallic materials - Tensile testing - Part 1: Method of test at room temperature (only Annex B in Pasing) | P, S |
| DIN EN ISO 15630-1 2019-05 | Steel for the reinforcement and prestressing of concrete - Test methods - Part 1: Reinforcing bars, rods and wire All test procedures Section 5 Tensile test Section 8 Axial fatigue test | P S S |
| DIN EN ISO 15630-2 2019-05 | Steel for the reinforcement and prestressing of concrete - Test methods - Part 2: Welded fabric and lattice girders | P |
| DIN EN ISO 15630-3 2020-02 | Steel for the reinforcement and prestressing of concrete - Test methods - Part 3: Prestressing steel All test procedures Section 5 Tensile test Section 10 Axial fatigue test | P S S |
| DIN EN 124-1 2015-09 | Gully tops and manhole tops for vehicular and pedestrian areas - Part 1: Definitions, classification, general principles of design, performance requirements and test methods | S |

Annex to the Accreditation Certificate D-PL-14063-03-00

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|--------------------------------|---|---|
| DIN EN 124-2 2015-09 | Gully tops and manhole tops for vehicular and pedestrian areas - Part 2: Gully tops and manhole tops made of cast iron | S |
| EAD 160004-00-0301 2016-09 | Post-tensioning systems for prestressing of structures; Annex C.2.1 Static load test Annex C.2.2 Cryogenic static load test – single tensile element Annex C.2.3 Cryogenic static load test – Multiple tensile elements/ anchorage/ coupling assembly test Annex C.3.1 Fatigue test – Mechanical Annex C.3.2 Fatigue test – Bond Anchorage Annex C.4.1 Load transfer test – Mechanical Annex C.4.2 Load transfer test – Bond Anchorage Annex C.5.1 Deviator static load test Annex C.5.2 Deviated tendon test Annex C.6.1 Assembly / stressing test Annex C.6.2 Duct filling test Annex C.7 Single tensile element test for the verification of constancy of performance Chapter 2.2.32 Impact resistance test Chapter 2.2.33 Friction test Chapter 2.2.34 Leak tightness test | S |
| Fib Bulletin 75 2014-12 | Polymer-duct systems for internal bonded post-tensioning Annex B1 Dichtigkeitsstest an der Kombination Ankerkörper-Hüllrohr Annex B2 Prüfung des elektrischen Widerstandes des Hüllrohrsystems Annex B3 Prüfung des elektrischen Widerstandes an der Kombination Ankerkörper-Hüllrohr Annex B5 Dichtigkeitsstest am Hüllrohr-System | S |
| FIB CEB-FIB 2019-03 | FIB CEB-FIB 89 Acceptance of stay cable systems using prestressing steels Abschnitt 6.2.3 Anchorage leak tightness testing | S |
| Setra – Cable Stays 2002-06 | Setra – Cable Stays – Recommendations of French Interministerial Commission on Prestressing Section 11.3 Qualification of Cable-Stay water tightness | S |
| ASTM A 370-21 2021-12 | Standard Test Methods and Definitions for Mechanical Testing of Steel - Tension Test at Round Specimens | P |

Annex to the Accreditation Certificate D-PL-14063-03-00

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| ASTM A 416/A 416M-18 2019-01 | Standard Specification for Steel Strand - Uncoated Seven-Wire for Prestressed Concrete | P |
| ASTM A 1032-15 (2019) 2019-11 | Standard Test Method for Hydrogen Embrittlement Resistance for Steel Wire hard Drawn Used for Prestressing Concrete Pipe | P |
| ASTM E 328-21 2021-02 | Standard Test Methods for Stress Relaxation for Materials and structures - A: Method for Conducting Stress Relaxation Tension Tests | P |

2 Mechanical-technological and physical testing of fresh and hardened concrete, cellular and lightweight aggregate concrete, steel fibre concrete, gunned concrete and concrete in buildings

| | | |
|----------------------------|--|---|
| DIN EN 12350-1 2019-09 | Testing fresh concrete - Part 1: Sampling and common apparatus | P |
| DIN EN 12350-5 2019-09 | Testing fresh concrete - Part 5: Flow table test | P |
| DIN EN 12350-6 2019-09 | Testing fresh concrete - Part 6: Density | P |
| DIN EN 12350-7 2022-05 | Testing fresh concrete - Part 7: Air content - Pressure methods (only pressure equalization methods) | P |
| DIN EN 12390-2 2019-10 | Testing hardened concrete - Part 2: Making and curing specimens for strength tests | P |
| DIN EN 12390-3 2019-10 | Testing hardened concrete - Part 3: Compressive strength of test specimens | P |
| DIN EN 12390-8 2019-10 | Testing hardened concrete - Part 8: Depth of penetration of water under pressure | P |
| DIN EN 12390-13 2021-09 | Testing hardened concrete - Part 13: Determination of secant modulus of elasticity in compression | P |
| ÖBV Guideline 2015-04 | ÖBV-Erhöhter baulicher Brandschutz mit Beton für unterirdische Verkehrsbauwerke Anhang A4 – Bestimmung des PP-Fasergehaltes im Frisch- und Festbeton | P |

3 Testing of building products for timber construction, including adhesive materials for load-bearing timber structures

3.1 Adhesive materials for timber structures

| | | |
|-------------------------|--|---|
| DIN EN 301 2018-01 | Adhesives, phenolic and aminoplastic, for load-bearing timber structures - Classification and performance requirements | S |
| DIN EN 302-1 2013-06 | Adhesives for load-bearing timber structures - Test methods - Part 1: Determination of longitudinal tensile shear strength | S |
| DIN EN 302-2 2017-11 | Adhesives for load-bearing timber structures - Test methods - Part 2: Determination of resistance to delamination | S |
| DIN EN 302-3 2017-11 | 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 | S |
| 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 | S |
| DIN EN 302-6 2021-10 | Adhesives for load-bearing timber structures - Test methods - Part 6: Determination of the minimum pressing time under referenced | S |
| DIN EN 302-7 2013-06 | Adhesives for load-bearing timber structures - Test methods - Part 7: Determination of the working life under referenced conditions | S |
| 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 | S |
| DIN EN 391 2002-04 | Glued laminated timber - Delamination test of glue lines (<i>withdrawn standard</i>) | S |
| DIN EN 1245 2011-07 | Adhesives - Determination of pH | S |

Annex to the Accreditation Certificate D-PL-14063-03-00

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|---------------------------|--|---|
| DIN EN 12092 2002-02 | Adhesives - Determination of viscosity only 6.2 Rotational viscometer | S |
| DIN EN 15416-1 2017-05 | Adhesives for load bearing timber structures other than phenolic and aminoplastic - Test methods - Part 1: Long-term tension load test perpendicular to the bond line at varying climate conditions with specimens perpendicular to the glue line (Glass house test) | S |
| DIN EN 15416-3 2019-06 | 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 | S |
| 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 under referenced conditions | S |
| DIN EN 15416-5 2017-05 | Adhesives for load bearing timber structures other than phenolic and aminoplastic - Test methods - Part 5: Determination of minimum pressing time under referenced conditions | S |
| DIN EN 15425 2017-05 | Adhesives - One component polyurethane (PUR) for load-bearing timber structures - Classification and performance requirements | S |
| DIN EN 16254 2016-12 | Adhesives - Emulsion polymerized isocyanate (EPI) for load-bearing timber structures - Classification and performance requirements | S |
| DIN EN 17224 2019-09 | Determination of compressive shear strength of wood adhesives at elevated temperatures | S |
| DIN EN 17334 2021-06 | Glued-in rods in glued structural timber products - Testing, requirements and bond shear strength classification | S |
| DIN 68141 2016-12 | Wood adhesives - Determination of the open drying time and evaluation of wetting and brushability | S |

3.2 Structural timber, glued solid wood materials

| | | |
|-----------------------|---|---|
| DIN EN 384 2019-02 | Structural timber - Determination of characteristic values of mechanical properties and density | S |
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Valid from: 04.04.2023
Date of issue: 04.04.2023

Annex to the Accreditation Certificate D-PL-14063-03-00

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|---|---|---|
| DIN EN 385 2007-11 | Finger jointed structural timber - Performance requirements and minimum production requirements <i>(withdrawn standard)</i> | S |
| DIN EN 386 2002-04 | Glued laminated timber - Performance requirements and minimum production requirements <i>(withdrawn standard)</i> | S |
| DIN EN 387 2002-04 | Glued laminated timber - Large finger joints - Performance requirements and minimum production requirements <i>(withdrawn standard)</i> | S |
| DIN EN 392 1996-04 | Glued laminated timber - Shear test glue lines <i>(withdrawn standard)</i> | S |
| DIN EN 408 2012-10 | Timber structures - Structural timber and glued laminated timber - Determination of some physical and mechanical properties | S |
| DIN EN 1194 1999-05 | Timber structures - Glued laminated timber - Strength classes and determination of characteristic values <i>(withdrawn standard)</i> | S |
| DIN EN 13183-1 2002-07 Corrigendum1 2003-12 | Moisture content of a piece of sawn timber - Part 1: Determination by oven dry method | S |
| DIN EN 13183-2 2002-07 Corrigendum 1 2003-12 | Moisture content of a piece of sawn timber - Part 2: Estimation by electrical resistance method | S |
| DIN EN 14080 2005-09 | Timber structures - Glued laminated timber - Requirements Annex A Determination of characteristic values (5-percentile) on the basis of test results and assumption criteria for samples Annex C Requirements for moisture cross-linked single component polyurethane adhesives for the production of glued laminated timber with glue joints having a maximum thickness of 0.5 mm and the corresponding test methods Annex D Determination of the performance | S |

Annex to the Accreditation Certificate D-PL-14063-03-00

characteristics of adhesives
(*withdrawn standard*)

| | | |
|-------------------------|--|---|
| DIN EN 14080 2013-09 | <p>Timber structures - Glued laminated timber and glued solid timber - Requirements</p> <p>Annex B.2 Sustained loading test with cyclic climatic conditions on test specimens normal to the glue joint for single component polyurethane adhesives and emulsion-polymer isocyanate adhesives</p> <p>Annex B.3 Delamination test of finger jointing in slats</p> <p>Annex C Delamination test of glue joints</p> <p>Annex D Glue joint shear testing</p> <p>Annex E Testing of laminates with or without finger jointing (including compliance criteria)</p> <p>Annex F Bending tests for glued laminated timber, glued solid timber and glued laminated timber with large finger joints (including compliance criteria)</p> <p>Annex G Measurement of moisture</p> | S |
| DIN EN 16351 2021-06 | <p>Timber structures - Cross laminated timber - Requirements</p> <p>Annex A (normative): Delamination test of glue lines between layers</p> <p>Annex B (normative): Tests with laminations with or without finger joints</p> <p>Annex C (normative): Determination of strength, stiffness and density properties of cross laminated timber</p> <p>Annex D (normative): Measurement of moisture content</p> <p>Annex G (normative): Shear tests</p> <p>Annex H (normative): Zusätzliche Prüfverfahren und Anforderungen für Klebstoffe der Unterklasse FJ zur Verwendung bei Schmalseitenverklebungen für tragende Zwecke</p> | S |

Annex to the Accreditation Certificate D-PL-14063-03-00

3.3 Wooden materials

| | | |
|-------------------------|--|---|
| DIN EN 314-1 2005-03 | Plywood - Bonding quality - Part 1: Test methods | S |
| DIN EN 314-2 1993-08 | Plywood; bonding quality; part 2: requirements | S |
| DIN EN 322 1993-08 | Wood-based panel - Determination of moisture content | S |
| DIN EN 789 2005-01 | Timber structures - Test methods - Determination of mechanical properties of wood based panels | S |
| DIN EN 14374 2016-07 | Timber structures - Structural laminated veneer lumber - Requirements Annex B: Method for testing the bonding quality | S |

3.4 Other

| | | |
|--------------------------------------|--|---|
| DIN EN 380 1993-10 | Timber structures - Test methods: General principles for static load testing | S |
| DIN EN 594 2011-09 | Timber structures - Test methods - Racking strength and stiffness of timber frame wall panels | S |
| DIN EN 595 1996-07 | Timber structures - Test methods - Test of trusses for the determination of strength and deformation behaviour | S |
| DIN EN 596 1996-07 | Timber structures - Test methods - Soft body impact test of timber framed walls | S |
| DIN EN 1195 1998-06 | Timber structures - Test methods - Performance of structural floor decking | S |
| DIN EN 14358 2007-03 | Timber structures - Calculation of characteristic 5-percentile values and acceptance criteria for a sample | S |
| DIN EN 14358 2016-11 | Timber structures - Calculation and verification of characteristic values | S |
| EOTA Technical Report 001 2003-02 | Determination of impact resistance of panels and panel assemblies | S |
| EOTA Technical Report 002 2000-10 | Test methods for light composite wood-based beams and columns | S |

4 Testing of sealings and sealing sheets

| | | |
|-------------------------|---|---|
| DIN EN 1928 2000-07 | Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness | P |
| DIN EN 1931 2001-03 | Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of water vapour transmission properties | P |
| DIN EN 13111 2010-11 | Flexible sheets for waterproofing - Underlays for discontinuous roofing and walls - Determination of resistance to water penetration | P |
| DIN EN 13416 2001-09 | Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Rules for sampling | P |
| DIN EN 15820 2011-06 | Polymer modified bituminous thick coatings for waterproofing - Determination of watertightness | P |

Annex to the Accreditation Certificate D-PL-14063-03-00

5 Testing of construction products (system of assessment and verification of constancy of performance 3) within the scope of the Regulation (EU) No 305/2011 laying down harmonised conditions for the marketing of construction products (Construction Products Regulation)

| Decision / resolution of the commission | System ¹⁾ | Technical specification | Location |
|---|----------------------|--|----------|
| 1999/90/EC Sealing sheets | 3 | EN 13859-1:2010 Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 1: Underlays for discontinuous roofing | P |
| | | EN 13859-2:2010 Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 2: Underlays for walls | |
| | | EN 13970:2004+A1:2006 Flexible sheets for waterproofing - Bitumen water vapour control layers - Definitions and characteristics | |
| | | EN 13984:2013 Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics | |
| | | EN 14909:2012 Flexible sheets for waterproofing - Plastic and rubber damp proof courses - Definitions and characteristics | |
| | | EN 14967:2006 Flexible sheets for waterproofing - Bitumen damp proof courses - Definitions and characteristics | |
| | | EN 15814:2011+A2:2014 Polymer modified bituminous thick coatings for waterproofing - Definitions and requirements | |

¹⁾ System of assessment and verification of consistency of performance

The requirements for a testing laboratory are fulfilled according to article 43 of the Construction Products Regulation.

Testing methods, which are necessary for determining the product type and cannot be executed by the holder of the certificate, are described in the list of subcontractors.

Without prior approval by the DAkKS German Accreditation Body, the testing laboratory body is permitted to use new revisions of the harmonized technical specifications..

Annex to the Accreditation Certificate D-PL-14063-03-00

Abbreviations used:

| | |
|-------|---|
| ASTM | American Society for Testing and Materials |
| CEB | Comité Euro-International du Béton (European-International Concrete Committee) |
| DIN | Deutsches Institut für Normung e. V. (German Standards Institute) |
| EAD | European Assessment Document |
| EN | Europäische Norm (European standard) |
| EOTA | European Organization for Technical Approvals |
| FIB | fédération internationale du béton (International Concrete Federation) |
| ISO | International Organization for Standardization |
| ÖBV | Österreichische Bautechnik Vereinigung (Austrian Construction Engineering Association) |
| Setra | Service d'études sur les transports, les routes et leurs aménagements (Department of studies on transport, roads and their development) |