

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-20518-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 22.08.2024

Date of issue: 16.09.2024

Holder of accreditation certificate:

Würth Industrie Service GmbH & Co. KG
Industriepark Würth, Drillberg, 97980 Bad Mergentheim

with the location

Würth Industrie Service GmbH & Co. KG
Prüflaboratorium
Industriepark Würth, Drillberg, 97980 Bad Mergentheim

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

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

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>.

Abbreviations used: see last page

Page 1 of 6

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

Annex to the Accreditation Certificate D-PL-20518-01-00

Tests in the fields:

Mechanical-technological material tests on screws and other fasteners, metallographic analyses, optical spark emission spectrometry (OES) on steel and iron materials, scanning electron microscopy (SEM) including energy-dispersive X-ray spectroscopy (EDX), corrosion tests

Within the scope of accreditation marked with *, 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 procedures within the flexible scope of accreditation.

1 Mechanical-technological tests

1.1 Hardness tests on metals*

DIN 7500-1 2021-07	Thread forming screws for ISO metric thread - Part 1: Technical specifications for case hardened and tempered screws
DIN 7513 2016-12	Thread cutting screws - Hexagon screws and slotted head screws - Dimensions, requirements, testing
DIN 7516 2016-12	Thread cutting screws - Cross recessed head screws - Dimensions, requirements, testing
DIN EN ISO 2639 2003-04	Steels - Determination and verification of the depth of carburized and hardened cases
DIN EN ISO 2702 2023-03	Fasteners - Heat treated tapping screws - Mechanical and physical properties
DIN EN ISO 6506-1 2015-02	Metallic materials - Brinell hardness test - Part 1: Test method
DIN EN ISO 6507-1 2024-01	Metallic materials - Vickers hardness test - Part 1: Test method
DIN EN ISO 6508-1 2024-04	Metallic materials - Rockwell hardness test - Part 1: Test method
DIN EN ISO 898-1 2013-05	Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread

Valid from: 22.08.2024

Date of issue: 16.09.2024

Annex to the Accreditation Certificate D-PL-20518-01-00

DIN EN ISO 898-2 2023-02	Fasteners - Mechanical properties of fasteners made of carbon steel and alloy steel - Part 2: Nuts with specified property classes
DIN EN ISO 898-3 2021-11	Fasteners - Mechanical properties of fasteners made of carbon steel and alloy steel - Part 3: Flat washers with specified property classes
DIN EN ISO 898-5 2012-09	Mechanical properties of fasteners made of carbon steel and alloy steel - Part 5: Set screws and similar threaded fasteners with specified hardness classes - Coarse thread and fine pitch thread
DIN EN ISO 3506-1 2020-08	Fasteners - Mechanical properties of corrosion-resistant stainless steel fasteners - Part 1: Bolts, screws and studs with specified grades and property classes
DIN EN ISO 3506-2 2020-08	Fasteners - Mechanical properties of corrosion-resistant stainless steel fasteners - Part 2: Nuts with specified grades and property classes
DIN EN ISO 18203 2022-07	Steel - Determination of the thickness of surface-hardened layers

1.2 Hardness tests on plastics*

DIN EN ISO 868 2003-10	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)
DIN ISO 48 2016-09	Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD)
DIN ISO 48-2 2021-02	Rubber, vulcanized or thermoplastic - Determination of hardness - Part 2: Hardness between 10 IRHD and 100 IRHD
DIN ISO 48-4 2021-02	Rubber, vulcanized or thermoplastic - Determination of hardness - Part 4: Indentation hardness by durometer method (Shore hardness)

Valid from: 22.08.2024

Date of issue: 16.09.2024

Annex to the Accreditation Certificate D-PL-20518-01-00

There is no flexibility for the following test method:

WISTQL-13-450 Micro Shore A based on DIN ISO 7619-1
2019-09

1.3 Strength test/tensile test*

DIN 580 Lifting eye bolts
2018-04

DIN 582 Lifting eye nuts
2018-04

DIN EN 15048-2 Non-preloaded structural bolting assemblies - Part 2: Fitness for
2016-09 purpose

DIN EN ISO 6892-1 Metallic materials - Tensile testing - Part 1: Method of test at room
2020-06 temperature

DIN EN ISO 898-1 Mechanical properties of fasteners made of carbon steel and alloy
2013-05 steel - Part 1: Bolts, screws and studs with specified property classes
- Coarse thread and fine pitch thread

DIN EN ISO 898-2 Fasteners - Mechanical properties of fasteners made of carbon steel
2023-02 and alloy steel - Part 2: Nuts with specified property classes

DIN EN ISO 3506-1 Fasteners - Mechanical properties of corrosion-resistant stainless
2020-08 steel fasteners - Part 1: Bolts, screws and studs with specified
grades and property classes

DIN EN ISO 3506-2 Fasteners - Mechanical properties of corrosion-resistant stainless
2020-08 steel fasteners - Part 2: Nuts with specified grades and property
classes

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Annex to the Accreditation Certificate D-PL-20518-01-00

1.4 Torque tests and friction coefficient tests*

DIN 7500-1 2021-07	Thread forming screws for ISO metric thread - Part 1: Technical specifications for case hardened and tempered screws
DIN 267-27 2023-10	Fasteners - Part 27: Steel screws, bolts and studs made of steel with pre-adhesive coating - Technical specifications
DIN 267-28 2009-09	Fasteners - Part 28: Steel screws, bolts and studs with locking coating, Technical specifications
DIN 7513 2016-12	Thread cutting screws - Hexagon screws and slotted head screws - Dimensions, requirements, testing
DIN 7516 2016-12	Thread cutting screws - Cross recessed head screws - Dimensions, requirements, testing
DIN EN ISO 16047 2013-01	Fasteners - Torque/clamp force testing
DIN EN 14399-2 2015-04	High-strength structural bolting assemblies for preloading - Part 2: Suitability for preloading
VDA 235-101 2021-11	Determination of friction coefficients of mechanical fasteners with metric threads
VDA 235-203 2005-08	Screwing behavior, friction coefficients - practical and assembly-oriented testing

There is no flexibility for the following test method:

WISTQL-13-1226 2024-05	Screwing tests with thread-forming screws in components to determine the tightening torque
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1.5 Impact tests*

DIN EN ISO 148-1 2017-05	Metallic materials - Charpy pendulum impact test - Part 1: Test method
DIN EN ISO 898-1 2013-05	Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread

Valid from: 22.08.2024

Date of issue: 16.09.2024

Annex to the Accreditation Certificate D-PL-20518-01-00

2 Metallographic analyses*

DIN EN ISO 898-1
2013-05 Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes
- Coarse thread and fine pitch thread

There is no flexibility for the following test method:

WISTQL-13-449 Structural analysis of low-alloy steels
2019-09

3 Optical spark emission spectrometry (OES)

WISTQL-13-756 Optical spark emission spectrometry (OES) for the determination of
2024-05 24 elements in steel and ferrous materials

4 Scanning electron microscopy (SEM) including micro-range analysis (EDX)

WISTQL-13-1754 EDX analysis using a scanning electron microscope
2024-05

5 Corrosion test*

DIN EN ISO 9227 Corrosion tests in artificial atmospheres - Salt spray tests
2023-03

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
VDA	Verband der Automobilindustrie e. V.
WISTQL	Würth Industrie Service - Technical quality assurance laboratory (in-house method)

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Page 6 of 6

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