

# Deutsche Akkreditierungsstelle

## Annex to the Accreditation Certificate D-PL-18993-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 28.06.2024

Date of issue: 28.06.2024

Holder of accreditation certificate:

**Zentrallabor Siegerland Braun & Co.  
Gewerbestraße 2, 57258 Freudenberg**

with the location

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Gewerbestraße 2, 57258 Freudenberg**

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

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## Annex to the Accreditation Certificate D-PL-18993-01-00

Tests in the fields:

**mechanical-technological and metallographic tests, corrosion tests as well as optical emission spectrometry of steel- and ferrous material and non-ferrous metal material**

**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.**

### 1 Mechanical-technological testing

DIN EN ISO 148-1 2017-05	Metallic materials – Charpy pendulum impact test – Part 1: Test method
DIN EN ISO 148-1 Supplement 1 2014-02	Metallic materials – Charpy pendulum impact test – Part 1: Test method; Supplement 1: Special test pieces
DIN EN ISO 9016 2022-07	Destructive tests on welds in metallic materials – Impact tests – Test specimen location, notch orientation and examination
ASTM E23 2024	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials
DIN EN ISO 6892-1 2020-06	Metallic materials – Tensile testing – Part 1: Method of test at room temperature
DIN EN ISO 6892-2 2018-09	Metallic materials – Tensile testing – Part 2: Method of test at elevated temperature
DIN EN ISO 6892-3 2015-07	Metallic materials – Tensile testing – Part 3: Method of test at low temperature
DIN EN ISO 4136 2022-09	Destructive tests on welds in metallic materials – Transverse tensile test
DIN EN ISO 5178 2019-05	Destructive tests on welds in metallic materials – Longitudinal tensile test on weld metal in fusion welded joints

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DIN EN 1561 2024-03	Founding – Grey cast irons
DIN EN 1562 2019-06	Founding – Malleable cast irons
DIN EN 1563 2019-04	Founding – Spheroidal graphite cast irons
ASTM A370 2024	Standard Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM E8/E8M 2024	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E21 2020	Standard Test Methods for Elevated Temperature Tension Tests of Metallic Materials
ASME IX QB 150 2023	Brazing: Tension Tests
ASME IX QW 150 2023	Welding: Tension Tests
DIN EN 10164 2018-12	Steel products with improved deformation properties perpendicular to the surface of the product
ASME II SA 770/A 770M 2023	Standard Specification for Through-Thickness Tension Testing of Steel Plates for Special Applications
DIN EN ISO 7438 2021-03	Metallic materials – Bend test
DIN EN 5173 2023-05	Destructive tests on welds in metallic materials – Bend tests
SEP 1390 1996-07	Weld bend test
DIN EN ISO 9017 2018-04	Destructive tests on welds in metallic materials – Fracture test
DIN 50106 2023-02	Testing of metallic materials – Compression test at room temperature

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DIN EN ISO 8492 2014-03	Metallic materials – Tube – Flattening test
DIN EN ISO 8493 2004-10	Metallic materials – Tube – Drift-expanding test
DIN EN ISO 8495 2014-03	Metallic materials – Tube – Ring-expanding test
DIN EN ISO 8496 2014-03	Metallic materials – Tube – Ring tensile test
DIN 50162 1978-09	Testing of clad steels; determination of shear strength between cladding metal and parent metal in shear test
ASME II SA 263 – 265 2023	Standard Specification for Stainless Chromium-Nickel Steel-Clad Plate
ASTM A 923 2023	Standard Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels

## 2 Hardness testing

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
ASTM E10 2023	Standard Test Method for Brinell Hardness of Metallic Materials
ASTM E92 2023	Standard Test Methods for Vickers Hardness and Knoop Hardness of Metallic Materials
DIN EN ISO 9015-1 2011-05	Destructive tests on welds in metallic materials – Hardness testing – Part 1: Hardness test on arc welded joints

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DIN EN ISO 9015-2 2016-10	Destructive tests on welds in metallic materials – Hardness testing – Part 2: Microhardness testing of welded joints
DIN EN ISO 18203 2022-07	Steel – Determination of the thickness of surface-hardened layers

**3 Metallographical testing**

DIN EN ISO 643 2020-06	Steels - Micrographic determination of the apparent grain size
ASTM E112 2013 (reapproved 2021)	Standard Test Methods for Determining Average Grain Size
DIN 50602 1985-09	Metallographic examination; microscopic examination of special steels using standard diagrams to assess the content of non-metallic inclusions
ASTM E562 2019	Standard Test Method for Determining Volume Fraction by Systematic Manual Point Count
DIN EN ISO 17639 2022-05	Destructive tests on welds in metallic materials - Macroscopic and microscopic examination of welds
DIN EN ISO 1463 2021-08	Metallic and oxide coatings – Measurement of coating thickness - Microscopical method
ISO 4968 2022-03	Steel; Macrographic examination by sulfur print (Baumann method)
ASTM A 923 2023	Standard Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels

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### 4 Corrosion testing

DIN EN ISO 3651-1 1998-08	Determination of resistance to intergranular corrosion of stainless steels – Part 1: Austenitic and ferritic-austenitic (duplex) stainless steels; Corrosion test in nitric acid medium by measurement of loss in mass (Huey test)
DIN EN ISO 3651-2 1998-08	Determination of resistance to intergranular corrosion of stainless steels – Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels; Corrosion test in media containing sulfuric acid
ASTM A 262 2015	Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
ASTM A 923 2023	Standard Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels
ASTM G 28 2022	Standard Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys
ASTM G 48 2011 (reapproved 2020)	Standard Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution

### 5 Optical emission spectrometry of steel- and ferrous materials as well as non-ferrous metal materials

ASTM E415 2021	Standard Test Method for Analysis of Carbon and Low-Alloy Steel by Spark Atomic Emission Spectrometry
ASTM E1086 2022	Standard Test Method for Analysis of Austenitic Stainless Steel by Spark Atomic Emission Spectrometry
ASTM E1999 2023	Standard Test Method for Analysis of Cast Iron by Spark Atomic Emission Spectrometry
ASTM E2209 2022	Standard Test Method for Analysis of High Manganese Steel by Spark Atomic Emission Spectrometry
ASTM E3047 2022	Standard Test Method for Analysis of Nickel Alloys by Spark Atomic Emission Spectrometry

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DIN EN 14726 2019-06	Aluminium and aluminium alloys – Determination of the chemical composition of aluminium and aluminium alloys by spark optical emission spectrometry
ASTM E1251a 2017	Standard Test Method for Analysis of Aluminium and Aluminium Alloys by Spark Atomic Emission Spectrometry
DIN EN 15079 2015-07	Copper and copper alloys – Analysis by spark optical emission spectrometry (S-OES)
ASTM E2994 2021	Standard Test Method for Analysis of Titanium and Titanium Alloys by Spark Atomic Emission Spectrometry and Glow Discharge Atomic Emission Spectrometry (Performance-Based Method)
DIN EN ISO 15350 2010-08	Steel and iron – Determination of total carbon and sulfur content – Infrared absorption method after combustion in an induction furnace (routine method)
DIN EN ISO 15351 2010-08	Steel and iron – Determination of nitrogen content – Thermal conductimetric method after fusion in a current of inert gas (Routine method)
DIN EN 10276-2 2003-10	Chemical analysis of ferrous materials – Determination of oxygen content in steel and iron – Part 2: Infrared method after fusion under inert gas
ASTM E1019 2018	Standard Test Methods for Determination of Carbon, Sulfur, Nitrogen, and Oxygen in Steel, Iron, Nickel, and Cobalt Alloys by Various Combustion and Inert Gas Fusion Techniques

Flexibility does not apply to the following test procedure:

ZLS-HV-OES 2023-09	Determination of the chemical content in metallic materials using optical emission spectrometry
ZLS-HV-V 2023-09	Determination of carbon, sulphur, nitrogen and oxygen in metallic materials using thermal conductivity measurement and infrared absorption

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**Abbreviations used:**

ASTM	American Society for Testing and Materials
DIN	German institute for standardization
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
SEP	Steel iron test sheet
ZLS-HV	In-house methods of Zentrallabor Siegerland Braun & Co

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