

Deutsche Akkreditierungsstelle GmbH

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

Valid from: 14.10.2019

Date of issue: 14.10.2019

Holder of certificate:

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

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 2013-02	Destructive tests on welds in metallic materials - Impact tests - Test specimen location, notch orientation and examination
ASTM E 23 2018	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials

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

Abbreviations used: see last page

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

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DIN EN ISO 6892-1 2017-02	Metallic materials - Tensile testing - Part 1: Method of test at room temperature (here: <i>Method A + B</i>)
DIN EN ISO 6892-2 2011-05	Metallic materials - Tensile testing - Part 2: Method of test at elevated temperature (here: <i>Method B</i>)
DIN EN ISO 6892-3 2015-07	Metallic materials - Tensile testing - Part 3: Method of test at low temperature (here: <i>Method B</i>)
DIN EN ISO 4136 2013-02	Destructive tests on welds in metallic materials - Transverse tensile test
DIN EN ISO 5178 2011-05	Destructive tests on welds in metallic materials - Longitudinal tensile test on weld metal in fusion welded joints
DIN EN 1561 2012-01	Founding - Grey cast irons (Scope: <i>Tension testing, hardness testing</i>)
DIN EN 1562 2012-05	Founding - Malleable cast irons (Scope: <i>Tension testing, hardness testing, notch impact test</i>)
DIN EN 1563 2012-03	Founding - Spheroidal graphite cast irons (Scope: <i>Tension testing, hardness testing, notch impact test</i>)
ASTM A 370a 2018	Standard Test Methods and Definitions for Mechanical Testing of Steel Products (here: <i>Tension test, bend test, hardness test, Charpy impact test</i>)
ASTM E 8/E 8Ma 2016	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E 21 2017	Standard Test Methods for Elevated Temperature Tension Tests of Metallic Materials
DIN EN ISO 7438 2016-07	Metallic materials - Bend test
DIN EN 5173 2012-02	Destructive tests on welds in metallic materials - Bend tests

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SEP 1390 1996-07	Weld bend test
DIN EN ISO 9017 2018-04	Destructive tests on welds in metallic materials - Fracture test
DIN 50106 2016-11	Testing of metallic materials - Compression test at room temperature
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

2 Hardness testing

DIN EN ISO 6507-1 2006-03	Metallic materials - Vickers hardness test - Part 1: Test method
DIN EN ISO 9015-1 2011-05	Destructive tests on welds in metallic materials - Hardness testing - Part 1: Hardness test on arc welded joints
DIN EN ISO 9015-2 2016-10	Destructive tests on welds in metallic materials - Hardness testing - Part 2: Microhardness testing of welded joints
DIN 50190-3 1979-03	Hardness depth of heat-treated parts; determination of the effective depth of hardening after nitriding
DIN EN ISO 6506-1 2015-02	Metallic materials - Brinell hardness test - Part 1: Test method (here: <i>HB 2,5/62,5; HB 2,5/187,5</i>)

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DIN EN ISO 6508-1 2016-12	Metallic materials - Rockwell hardness test - Part 1: Test method (here: <i>HRC</i>)
DIN EN ISO 2639 2003-04	Steels - Determination and verification of the depth of carburized and hardened cases
ASTM E 10 2018	Standard Test Method for Brinell Hardness of Metallic Materials (here: <i>HB 2,5/62,5; HB 2,5/187,5</i>)
ASTM E 92 2017	Standard Test Method for Vickers Hardness and Knoop Hardness of Metallic Materials (here: <i>HV5 and HV10</i>)

3 Metallographical testing

DIN EN ISO 643 2013-05	Steels - Micrographic determination of the apparent grain size
DIN 50602 1985-09	Metallographic examination; microscopic examination of special steels using standard diagrams to assess the content of non- metallic inclusions (here: <i>Section 7+8</i>) (<i>withdrawn standard</i>)
DIN EN ISO 17639 2013-02	Destructive tests on welds in metallic materials - Macroscopic and microscopic examination of welds
ISO 4968 1979-11	Steel; Macrographic examination by sulfur print (Baumann method)
ASTM A 923 2014	Standard Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels (here: <i>Method B, C</i>)
ASTM E 112 2013	Standard Test Methods for Determining Average Grain Size

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)
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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 Practice B: Ferric Sulfate-Sulfuric Acid Test for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels Practice C: Nitric Acid Test for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels Practice E: Copper-Copper Sulfate-Sulfuric Acid Test for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels Practice F: Copper-Copper Sulfate-50 % Sulfuric Acid Test for Detecting Susceptibility to Intergranular Attack in Molybdenum Bearing Austenitic Stainless Steels
ASTM G 28 2002 (reapproved 2015)	Standard Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys (here: <i>Practice A</i>)
ASTM G 48 2011 (reapproved 2015)	Standard Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution (here: <i>Practice A</i>)

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

DIN EN ISO 9556 2002-04	Steel and iron - Determination of total carbon content - Infrared absorption method after combustion in an induction furnace
DIN EN 24935 1992-07	Determination of sulfur content of steel and iron by infrared absorption spectroscopy after combustion in an induction furnace
ZLS-IHM 1 2016-07	Standard test procedure - Optical atomic emission spectral analysis of iron-based alloy (here: <i>C, Si, Mn, P, S, Al, Cr, Ni, Mo, Cu, V, Nb, Ta, Ti, Sn, As, Sb, B, Ca</i> (except grey cast iron and spheroidal graphite iron))
ZLS-IHM 02 2016-07	Standard test procedure - Optical atomic emission spectral analysis of nickel-base alloy (here: <i>C, Si, Mn, P, S, Al, Cr, Ni, Mo, Cu, B, Ti, Nb, Ta, Fe, Co</i>)

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ZLS-IHM 03
2016-07

Determination of overall nitrogen and oxygen proportion by thermal conductivity measurement and infrared absorption

Abbreviations used:

ASTM	American Society for Testing and Materials
DIN	German Institute for Standardization
EN	European Standard
ISO	International Organisation for Standardization
SEP	Stahleisenprüfblatt
ZLS-IHM	Hausverfahren der Zentrallabor Siegerland Braun & Co.

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