

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-11126-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 30.06.2020

Date of issue: 03.09.2020

Holder of certificate:

H. Butting GmbH & Co KG
Prüflaboratorium
Gifhorner Straße 59, 29379 Knesebeck

Tests in the fields:

mechanical-technological, mechanical, metallographical and corrosion tests at metallic materials; material testing of metals using optical emission spectrometry of steel- and ferrous materials as well as nickel-based alloys; manual and mechanized non-destructive testing (radiographic testing and ultrasonic testing) at metallic materials, on welds and steel pipes

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkKS, to use standards or equivalent testing methods (without AA-WPL SPECTRO, API, DNVGL and DNV-OS) listed here with different issue dates.

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

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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1 Mechanical-technological tests at metallic materials

1.1 Stability tests

DIN EN ISO 6892-1 2017-02	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
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 4136 2013-02	Destructive tests on welds in metallic materials - Transverse tensile test
ASTM E 9 2019	Standard Test Methods of Compression Testing of Metallic Materials at Room Temperature
ASTM A 264 2012	Standard Specification for Stainless Chromium-Nickel Steel-Clad Plate (here: <i>only chapter 7.2 - Shear strength</i>)
ASTM A 265 2012 Reapproved: 2019	Standard Specification for Nickel and Nickel-Base Alloy-Clad Steel Plate (here: <i>only chapter 7.2 - Shear strength</i>)

1.2 Toughness tests

DIN EN ISO 148-1 2017-05	Metallic materials - Charpy pendulum impact test - Part 1: Test method
ASTM E 23 2018	Test Methods for Notched Bar Impact Testing of Metallic Materials

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1.3 Hardness tests

DIN EN ISO 6506-1 2015-02	Metallic materials - Brinell hardness test - Part 1: Test method (here: <i>only 2,5/187,5</i>)
ASTM E 10 2018	Standard Test Method for Brinell Hardness of Metallic Materials (here: <i>only 2,5/187,5</i>)
DIN EN ISO 6507-1 2018-07	Metallic materials - Vickers hardness test - Part 1: Test method (here: <i>only HV1, HV5, HV10</i>)
ASTM E 92 2017	Standard Test Methods for Vickers Hardness and Knoop Hardness of Metallic Materials (here: <i>only HV1, HV5, HV10</i>)
DIN EN ISO 6508-1 2016-12	Metallic materials - Rockwell hardness test - Part 1: Test method (here: <i>only HRB, HRC</i>)
ASTM E 18 2018	Test Methods for Rockwell Hardness of Metallic Materials (here: <i>only HRB, HRC</i>)
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 (here: <i>only HV1</i>)

2 Ductility tests on metallic materials and pipes

DIN EN ISO 9017 2018-04	Destructive tests on welds in metallic materials - Fracture test
DIN EN ISO 7438 2016-07	Metallic materials - Bend test
DIN EN ISO 5173 2012-02	Destructive tests on welds in metallic materials - Bend tests

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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 8496
2014-03 Metallic materials - Tube - Ring tensile test

3 Corrosion tests

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
(here: *only method A, B, C, E*)

ASTM A 923
2014 Standard Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels

ASTM G 28
2002
reapproved: 2015 Standard Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys

ASTM G 48
2011 Standard Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution
(here: *only Method A*)

SEP 1877
1994-07 Test of the resistance of high-alloy, corrosion-proof materials against intercrystalline corrosion

4 Roughness measurement

DIN EN ISO 4288
1998-04 Geometrical Product Specifications (GPS) - Surface texture: Profile method - Rules and procedures for the assessment of surface texture

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5 Metallographical tests

ASTM E 562 2019	Standard Test Method for Determining Volume Fraction by Systematic Manual Point Count
ASTM E 1245 2003 reapproved: 2016	Standard Practice for Determining the Inclusion or Second-Phase Constituent Content of Metals by Automatic Image Analysis
DIN EN ISO 643 2013-05	Steels - Micrographic determination of the apparent grain size
ASTM E 112 2013	Standard Test Methods for Determining Average Grain Size
DIN EN ISO 17781 2017-11	Petroleum, petrochemical and natural gas industries - Test methods for quality control of microstructure of ferritic/austenitic (duplex) stainless steels (hier: <i>only chapter 5.2 - Microstructural examination</i>)
DIN EN ISO 17639 2013-12	Destructive tests on welds in metallic materials - Macroscopic and microscopic examination of welds

6 Optical emission spectrometry

AA-WPL SPECTRO-01 2019-12	Chemical analysis of metal alloys using optical emission spectrometry Iron-based alloys: Determination of the alloying elements C, Si, Mn, P, S, Cr, Ni, Mo, Cu, Ti, Nb, Al, N, Fe, B Nickel-based alloys: Determination of the alloying elements C, Si, Mn, P, S, Cr, Mo, Fe, V, W, Cu, Al, Nb, Ti, Ni
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7 Non-destructive tests

7.1 Radiographic tests

DIN EN ISO 5579 2014-04	Non-destructive testing - Radiographic testing of metallic materials using film and X- or gamma rays - Basic rules (here: <i>only chapter 6 - Recommended techniques for making radiographs</i>)
DIN EN ISO 17636-1 2013-05	Non-destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film
DIN EN ISO 17636-2 2013-05	Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors
DIN EN ISO 10893-6 2019-06	Non-destructive testing of steel tubes - Part 6: Radiographic testing of the weld seam of welded steel tubes for the detection of imperfections
DIN EN ISO 10893-7 2019-06	Non-destructive testing of steel tubes - Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections
DNV-OS-F101 2013	Offshore Standard - Submarine Pipeline Systems: APPENDIX D - Non-Destructive Testing (NDT) : - Radiographic examination
DNVGL-ST-F101 2017	Offshore Standard - Submarine Pipeline Systems: APPENDIX D - Non-Destructive Testing (NDT) : - Radiographic examination
API 5L 2018-04	Specification for Line Pipe - Radiographic examination
ASME V 2017-07	ASME Boiler and Pressure Vessel Code, Section V (here: <i>only article 2 - Radiographic examination</i>)

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7.2 Ultrasonic tests

DIN EN ISO 16810 2014-07	Non-destructive testing - Ultrasonic testing - General principles (here: <i>only</i> chapter 9 - testing)
DIN EN ISO 10893-8 2011-07	Non-destructive testing of steel tubes - Part 8: Automated ultrasonic testing of seamless and welded steel tubes for the detection of laminar imperfections
DIN EN ISO 10893-9 2011-07	Non-destructive testing of steel tubes - Part 9: Automated ultrasonic testing for the detection of laminar imperfections in strip/plate used for the manufacture of welded steel tubes
DIN EN ISO 10893-10 2011-07	Non-destructive testing of steel tubes - Part 10: Automated full peripheral ultrasonic testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of longitudinal and/or transverse imperfections
DIN EN ISO 10893-11 2011-07	Non-destructive testing of steel tubes - Part 11: Automated ultrasonic testing of the weld seam of welded steel tubes for the detection of longitudinal and/or transverse imperfections
DNV-OS-F101 2013	Offshore Standard - Submarine Pipeline Systems: APPENDIX D - Non-Destructive Testing (NDT) : - Ultrasonic examination
DNVGL-ST-F101 2017	Offshore Standard - Submarine Pipeline Systems: APPENDIX D - Non-Destructive Testing (NDT) : - Ultrasonic examination
ASTM A 577/A 577M 2017	Standard Specification for Ultrasonic Angle-Beam Examination of Steel Plates
ASTM A 578/A 578M 2017	Standard Specification for Straight-Beam Ultrasonic Examination of Rolled Steel Plates for Special Applications
ASTM E 213 2014	Standard Practice for Ultrasonic Testing of Metal Pipe and Tubing
API 5L 2018-04	Specification for Line Pipe - Ultrasonic examination

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Abbreviations used:

AA-WPL SPECTRO	In house method of the H. BUTTING GmbH & Co. KG
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
API	American Petroleum Institute
CEN	European Committee for Standardization
DIN	German Institute for Standardization
DNVGL	Det Norske Veritas - Germanischer Lloyd
DNV-OS	Det Norske Veritas - Offshore Standard
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
SEP	Steel-iron Test Sheets from the Association of German Ironworkers
SPEC	Standard Performance Evaluation Corporation
TR	Technical Report

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