

Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-PL-14153-02-02 according to DIN EN ISO/IEC 17025:2018

Valid from: 30.01.2024

Date of issue: 30.01.2024

This annex is a part of the accreditation certificate D-PL-14153-02-00.

Holder of partial accreditation certificate:

**TÜV SÜD Industrie Service GmbH
Westendstraße 199, 80696 München**

with the locations

**TÜV SÜD Industrie Service GmbH
Gottlieb-Daimler-Straße 7, 70794 Filderstadt**

**TÜV SÜD Industrie Service GmbH
Gewerbegebiet Grimma Süd
Bahnhofstraße 5, Gebäude 48, 04668 Grimma**

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 general with the principles of DIN EN ISO 9001.

Non-destructive testing (radiographic testing, ultrasonic testing, eddy current testing, acoustic emission testing, magnetic testing, penetrant testing, visual testing) on components and plant engineering

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>.

Within the accreditation areas marked with *, the testing laboratory is permitted to use the standardized or equivalent test methods listed here with different versions without the prior information and approval of the DAkkS.

The testing laboratory has a current list of all testing procedures in the flexible accreditation area.

The procedures are identified by the following symbols of the sites where they are performed:

F - Filderstadt

G - Grimma

1 Non-destructive testing

1.1 Radiographic testing (RT) *

DIN EN ISO 5579 2014-04	Non-destructive testing - Radiographic testing of metallic materials using film and X- or gamma rays - Basic rules	F, G
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	F, G
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	F
DIN EN ISO 17636-1 2013-05	Non-destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film	F, G
DIN EN ISO 17636-2 2013-05	Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors	F
DIN EN 12681-1 2018-02	Founding - Radiographic testing - Part 1: Film techniques	F
DIN EN 12681-2 2018-02	Founding - Radiographic testing - Part 2: Techniques with digital detectors	F
DIN 25435-7 2021-06	In-service inspections for primary coolant circuit components of light water reactors - Part 7: Radiographic testing	F

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1.2 Ultrasonic Testing (UT)

DIN EN ISO 10863* 2020-09	Non-destructive testing of welds - Ultrasonic testing - Use of time-of-flight diffraction technique (TOFD)	F
DIN EN ISO 13588* 2019-07	Non-destructive testing of welds - Ultrasonic testing - Use of automated phased array technology	F
DIN EN ISO 16809* 2020-02	Non-destructive testing - Ultrasonic thickness measurement	F, G
DIN EN ISO 16810* 2014-07	Non-destructive testing - Ultrasonic testing - General principles	F, G
DIN EN ISO 16823* 2014-07	Non-destructive testing - Ultrasonic testing - Transmission technique	F, G
DIN EN ISO 16826* 2014-06	Non-destructive testing - Ultrasonic testing - Examination for discontinuities perpendicular to the surface	F
DIN EN ISO 17640* 2019-02	Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment	F, G
Din EN ISO 20601* 2019-04	Non-destructive testing of welds - Ultrasonic testing - Use of automated phased array technology for thin-walled steel components	F
DIN EN ISO 22825* 2018-02	Non-destructive testing of welds - Ultrasonic testing - Testing of welds in austenitic steels and nickel-based alloys	F
DIN EN 3718* 2012-08	Aerospace series - Test method for metallic materials - Ultrasonic inspection of tubes	F
DIN EN 10160* 1999-09	Ultrasonic testing of steel flat product of thickness equal to or greater than 6 mm (reflection method)	F, G
DIN EN 10228-3* 2016-10	Non-destructive testing of steel forgings - Part 3: Ultrasonic testing of ferritic or martensitic steel forgings	F, G
DIN EN 10228-4* 2016-10	Non-destructive testing of steel forgings - Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings	F, G

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DIN EN 10306* 2002-04	Iron and steel - Ultrasonic testing of H beams with parallel flanges and IPE beams	F
DIN EN 10307* 2002-03	Non-destructive testing - Ultrasonic testing of austenitic and austenitic-ferritic stainless steels flat products of thickness equal to or greater than 6 mm (reflection method)	F, G
DIN EN 10308* 2002-03	Non-destructive testing - Ultrasonic testing of steel bars	F, G
DIN EN 12680-1* 2003-06	Founding - Ultrasonic examination - Part 1: Steel castings for general purposes	F
DIN EN 12680-2* 2003-06	Founding - Ultrasonic examination - Part 2: Steel castings for highly stressed components	F
DIN EN 12680-3* 2012-02	Founding - Ultrasonic testing - Part 3: Spheroidal graphite cast iron castings	F
DIN EN 13100-3* 2005-02	Non-destructive testing of welded joints in thermoplastics semi-finished products - Part 3: Ultrasonic testing	F
DIN 25435-1* 2020-12	In-service inspections for primary coolant circuit components of light water reactors - Part 1: Automated ultrasonic testing	F
ISO 4992-1* 2020-03	Steel castings - Ultrasonic examination - Part 1: Steel castings for general purposes	F
ISO 4992-2* 2020-03	Steel castings - Ultrasonic examination - Part 2: Steel castings for highly stressed components	F
SEP 1915 2005-12	Ultrasonic testing of steel tubes for longitudinal defects	G
SEP 1920* 1984-12	Ultrasonic testing of rolled semi-finished products on internal material discontinuities	G
SEP 1922 1985-07	Ultrasonic testing of ferritic steel castings	G

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SEP 1923*
2009-02 Ultrasonic testing of steel forgings to stringent standards, G
in particular for components in turbine and generator
systems

1.3 Magnetic testing (MT) *

DIN EN ISO 9934-1 Non-destructive testing - Magnetic particle testing - Part 1: F, G
2017-03 General principles

DIN EN ISO 10893-5 Non-destructive testing of steel tubes - Part 5: Magnetic F, G
2011-07 particle inspection of seamless and welded ferromagnetic
steel tubes for the detection of surface imperfections

DIN EN ISO 17638 Non-destructive testing of welds - Magnetic particle testing F, G
2017-03

DIN EN 1369 Founding - Magnetic particle testing F, G
2013-01

DIN EN 10228-1 Non-destructive testing of steel forgings - Part 1: Magnetic F, G
2016-10 particle inspection

ISO 4986 Steel castings - Magnetic particle inspection F
2020-02

1.4 Penetrant testing (PT) *

DIN EN ISO 3452-1 Non-destructive testing - Penetrant testing - Part 1: F, G
2022-02 General principles

DIN EN ISO 3452-5 Non-destructive testing - Penetrant testing - Part 5: F, G
2009-04 Penetrant testing at temperatures higher than 50 °C

DIN EN ISO 3452-6 Non-destructive testing - Penetrant testing - Part 6: F, G
2009-04 Penetrant testing at temperatures lower than 10 °C

DIN EN ISO 10893-4 Non-destructive testing of steel tubes - Part 4: Liquid F, G
2011-07 penetrant inspection of seamless and welded steel tubes
for the detection of surface imperfections

DIN EN 1371-1 Founding - Liquid penetrant testing - Part 1: Sand, gravity F
2012-02 die and low pressure die castings

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DIN EN 1371-2 2015-04	Founding - Liquid penetrant testing - Part 2: Investment castings	F
DIN EN 10228-2 2016-10	Non-destructive testing of steel forgings - Part 2: Penetrant testing	F, G

1.5 Eddy current testing (ET) *

DIN EN ISO 2360 2017-12	Non-conductive coatings on non-magnetic electrically conductive base metals - Measurement of coating thickness - Amplitude-sensitive eddy-current method	F
DIN EN ISO 15549 2019-10	Non-destructive testing - Eddy current testing - General principles	F
DIN EN ISO 17643 2015-12	Non-destructive testing of welds - Eddy current examination of welds by complex plane analysis	F
DIN EN 1971-1 2020-02	Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 1: Test with an encircling test coil on the outer surface	F
DIN EN 1971-2 2020-02	Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 2: Test with an internal probe on the inner surface	F
DIN 25435-6 2021-05	In-service inspections for primary coolant circuit components of light water reactors - Part 6: Eddy current testing of steam generator heating tubes	F
DKI WP 781 2008-03	Eddy current testing of round condenser and heat exchanger tubes of copper and wrought copper alloys	F
DKI WP 801 2008-03	Eddy current testing of the tightness of rolled, finned tubes made from copper and wrought copper alloys according to EN 12452 and VdTÜV material specification 420	F
DKI WP 821 2008-03	Eddy current testing of oval tubes made from copper and wrought copper alloys	F

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1.6 Visual testing (VT) *

DIN EN ISO 17637 2017-04	Non-destructive testing of welds - Visual testing of fusion-welded joints	F, G
DIN EN 13018 2016-06	Non-destructive testing - Visual testing - General principles	F, G
DIN EN 13100-1 2017-08	Non-destructive testing of welded joints of thermoplastics semi-finished products - Part 1: Visual examination	F
DIN 25435-4 2021-05	In-service inspections for primary collant circuit components of light water reactors - Part 4: Visual testing	F

1.7 Acoustic emission testing (AT) *

DIN EN 14584 2013-07	Non-destructive testing - Acoustic emission testing - Examination of metallic pressure equipment during proof testing - Planar location of AE sources	F, G
DIN EN 15495 2008-02	Non-destructive testing - Acoustic emission - Examination of metallic pressure equipment during proof testing - Zone location of AE sources	F, G
DIN EN 17391 2022-08	Non-destructive testing - Acoustic emission testing - In-service acoustic emission monitoring of metallic pressure equipment and structures - General requirements	F

1.8 General non-destructive testing methods *

DIN EN ISO 17635 2017-04	Non-destructive testing of welds - General rules for metallic materials	F, G
DIN EN 12799 2000-12	Brazing - Non-destructive examination of brazed joints	F, G
DIN 25435-2 2021-05	In-service inspections for primary coolant circuit components of light water reactors - Part 2: Magnetic particle and penetrant testing	F

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AD 2000-Leaflet HP 5/3 Annex 1 2020-12	Non-destructive testing of welded joints - Minimum requirements for non-destructive testing methods	F, G
KTA 3201.1 2017-11 Cor. 2019-04	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Components of the reactor coolant pressure boundary of light water reactors - Part 1: Materials and product forms Annex B: Performance of manual ultrasonic examinations Annex C: Performance of surface examination by magnetic particle and liquid penetrant methods	F
KTA 3201.3 2017-11 Cor. 2019-04	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Components of the Reactor Coolant Pressure Boundary of Light Water Reactors - Part 3: Manufacture Annex C: Performance of manual ultrasonic examinations Annex D: Performance of manual ultrasonic angled pitch-catch examinations Annex E: Performance of surface examination by magnetic particle and liquid penetrant methods	F
KTA 3201.4 2016-11	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Components of the reactor coolant pressure boundary of light water reactors - Part 4: Inservice inspections and operational monitoring	F
KTA 3204 2017-11	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Reactor pressure vessel internals Chapter 8.9: Requirements for non-destructive testing and evaluation on test results	F
KTA 3211.1 2017-11 Cor. 2019-04	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Pressure and activity retaining components of systems outside the primary circuit - Part 1: Materials Annex D: Performance of manual ultrasonic examinations Annex E: Performance of surface examination by magnetic particle and liquid penetrant methods	F

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KTA 3211.3 2017-11 Cor. 2019-04	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Pressure and Activity Retaining Components of Systems Outside the Primary Circuit - Part 3: Manufacture Annex D: Performance of manual ultrasonic examinations Annex E: Performance of surface examination by magnetic particle and liquid penetrant methods	F
KTA 3211.4 2017-11	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Pressure and Activity Retaining Components of Systems Outside the Primary Circuit - Part 4: Inservice Inspections and Operational Monitoring	F
KTA 3401.4 2022-11	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Reactor containments of steel - Part 4: Inservice inspections	F
KTA 3903 2020-12	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Inspection, Testing and Operation of Lifting Equipment in Nuclear Power Plants Annex B: Non-destructive testing	F
KTA 3905 2020-12	Safety Standards of the Nuclear Safety Standards Commission (KTA) - Load Attaching Points on Loads in Nuclear Power Plants Annex B: Non-destructive testing	F
SEP 1914 1983-08	Non-destructive testing of fusion-welded seams in pipes of stainless steels	G
SEP 1916 1989-12	Non-destructive testing of fusion welded ferritic steel tubes	G
SEP 1917 1994-09	Non-destructive testing of resistance welded pipes of ferritic steels	G
DVGW GW 350 2015-06	Welding Joints of Steel Pipelines for Gas and Water Supply - Manufacturing, Testing and Evaluation	F, G

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Abbreviations used:

AD HP	Pressure Vessel Working Group; Manufacturing and testing
DIN	German Institute for Standardization
DKI	German Copper Institute
DVGW	German Association for Gas and Water
EN	European standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
KTA	Nuclear Engineering Committee
SEP	Steel-iron test sheet from the Association of German Ironworkers
VdTÜV	Association of Technical Inspection Associations