Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-21039-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 26.06.2025

Date of issue: 26.06.2025

Holder of certificate:

Framatome GmbH Qualicon
Paul-Gossen-Straße 100, 91052 Erlangen

with its locations

Framatome GmbH
Qualicon
Paul-Gossen-Straße 100, 91052 Erlangen

Framatome GmbH
Am Pestalozziring 20a, 91058 Erlangen

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.

Tests in the fields:

manual non-destructive testing (radiographic, ultrasonic, magnetic, penetrant, visual, leak and eddy current testing) and mechanized testing (ultrasonic, eddy current and visual testing) of metallic materials, plastics, carbon fiber reinforced materials and composite materials in plant and mechanical engineering, traffic engineering and aerospace

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

Within the indicated test areas the testing laboratory is permitted without being required to prior inform and obtain approval from DAkkS

[Flex B] to have the free choice from standardised or equivalent test methods.
[Flex C] to modify, develop or further develop test methods.

The test methods listed are examples. The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation. The list is publicly available on the website of the testing laboratory

All procedures are carried out at both locations.

1 Manual ultrasonic testing [Flex C]

(Manual ultrasonic testing of components made of metal, plastic and composite materials for qualitative evaluation and wall thickness gauging for components made of metal or plastics)

ASME BPVC.V:2023 Sect. V, Article 4 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 4: Ultrasonic examination methods for welds
ASME BPVC.V:2023 Sect. V, Article 5 Ed. 2023	ASME Boiler and Pressure Vessel Code, Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 5: Ultrasonic examination methods for materials
ASME BPVC.V:2023 Sect. V, Article 23 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection B: Documents adopted by Section V, Article 23: SA-388 Standard practice for ultrasonic examination of steel forgings SA-435 Standard specification for straight beam ultrasonic examination of steel plates SA-577 Standard specification for ultrasonic angle beam examination of steel plates SA-745 Standard practice for ultrasonic examination of austenitic forgings SE-273 Standard practice for ultrasonic testing of the weld zone of welded pipe and tubing SE-797 Standard specification for measuring thickness by manual ultrasonic pulse echo contact method SE-2700 Standard practice for contact ultrasonic testing of welds using phased arrays
ASME BPVC.XI.1:2023 Sect. XI, Article IWA-/IWB-/	ASME Boiler and Pressure Vessel Code, Section XI.1: Rules for Inservice Inspection of Nuclear Power Plant Components, Division 1,

-Translation-

IWC-/IWD-3000 Ed. 2023	Rules for Inspection and Testing Components of Light-Water-Cooled Plants; Article IWA-/IWB-/IWC-/IWD-3000: Acceptance standards App. I: Ultrasonic Examinations App. III: Ultrasonic examination of vessel and piping welds App. VIII: Performance demonstration for ultrasonic examination systems
ASTM E 114-15 2015	Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Contact Testing
ASTM E 164-19 2019	Standard Practice for Contact Ultrasonic Testing of Weldments
ASTM E 587-15 2015	Standard Practice for Ultrasonic Angle-Beam Contact Testing
AVS D 11.2/50 2008-07	General guidelines for the procedure of ultrasonic tests
AVS D 11.3/50 1982-07	General guidelines for the procedure of manual ultrasonic tests with the tandem technology
DIN EN ISO 16810 2014-07	Non-destructive testing - Ultrasonic testing - General principles
DIN EN ISO 17640 2019-02	Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment
DIN EN ISO 22825 2018-02	Non-destructive testing of welds - Ultrasonic testing - Testing of welds in austenitic steels and nickel-based alloys
QR E NDE No. 11.2/40 2018-05	NDE Procedure der IBOQ-G, Rev. o Ultrasonic examination
SEP 1915 1994-09	Ultrasonic testing of steel pipes for aberration
SEP 1918 1992-01	Ultrasonic testing of steel pipes for transverse defects
SEP 1919 1977-06	Ultrasonic testing for laminations of pipes of creep-resistant steels
SEP 1920 1984-12	Ultrasonic testing of rolled semi-finished products on internal material discontinuities

-Translation-

SEP 1922 1985-07	Ultrasonic testing of forgings of ferritic steel
SEP 1923 2009-02	Ultrasonic testing of steel forgings to stringent standards, in particular for components in turbine and generator systems

2 Mechanized ultrasonic testing [Flex C]
(Mechanized ultrasonic testing of components made of metal, plastic and composite materials for qualitative evaluation by means of validated methods)

ASME BPVC.V:2023 Sect. V, Article 4 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 4: Ultrasonic examination methods for welds
ASME BPVC.V:2023 Sect. V, Article 5 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 5: Ultrasonic examination methods for materials
ASME BPVC.V:2023 Sect. V, Article 23 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection B: Documents adopted by Section V Article 23: SA-388 Standard practice for ultrasonic examination of steel forgings SA-435 Standard specification for straight beam ultrasonic examination of steel plates SA-577 Standard specification for ultrasonic angle beam examination of steel plates SA-745 Standard practice for ultrasonic examination of austenitic forgings SE-273 Standard practice for ultrasonic testing of the weld zone of welded pipe and tubing SE-2700 Standard practice for contact ultrasonic testing of welds using phased array
ASME BPVC.XI.1:2023 Sect. XI, Article IWA-/IWB-/IWC/IWD-3000 Ed. 2023	ASME Boiler and Pressure Vessel Code, Section XI.1: Rules for Inservice Inspection of Nuclear Power Plant Components, Division 1, Rules for Inspection and Testing of Components of Light-Water-Cooled Plants; Article IWA-/IWB-/IWC-/IWD-3000: Acceptance standards App. I: Ultrasonic Examinations App. III: Ultrasonic examination of vessel and piping welds App. VIII: Performance demonstration for ultrasonic examination systems

-Translation-

DIN 25435-1 2020-12	In-service inspections for primary coolant circuit components of light-water reactors - Part 1: Automated ultrasonic 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 10893-10 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 16823 2014-07	Non-destructive testing - Ultrasonic testing - Through-transmission technique
DIN EN ISO 16826 2014-06	Non-destructive testing - Ultrasonic testing - Testing for discontinuities perpendicular to the surface

3 Radiographic testing [Flex C]
(Radiographic testing of components made of metal, plastic and composite materials up to a maximum energy of 10 MeV by means of x-ray films and digital detectors for qualitative evaluation)

ASME BPVC.V:2023 Sect. V, Article 2 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 2: Radiographic Examination
ASME BPVC.V:2023 Sect. V, Article 22 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection B: Documents adopted by Section V Article 22: SE 94 Standard Guide for radiographic examination SE-1030 Standard test method for radiographic examination of metallic castings
ASTM E1032-19 2019	Standard Practice for Radiographic Examination of Weldments Using Industrial X-Ray Film
ASTM E 1742/E 1742M 2023	Standard Practice for Radiographic Examination
DIN 25435-7 2021-06	In-service inspections for primary coolant circuit components of light water reactors - Part 7: Radiographic testing

-Translation-

DIN EN 12681-1 2018-02	Founding - Radiographic testing - Part 1: Film techniques
DIN EN ISO 5579 2014-04	Non-destructive testing - Radiographic testing of metallic materials using film and X- or gamma rays - Basic rules
DIN EN ISO 17636-1 2022-10	Non destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film
DIN EN ISO 17636-2 2023-05	Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors
QR E NDE No. 11.4/40 2024-05	NDE Procedure der IBOQ-G, Rev. r Radiographic Examination of Welds and Castings

4 Magnetic testing [Flex C]
(Manual inspection of the surface and near-surface regions of ferromagnetic materials for qualitative evaluation by magnetic testing)

AVS D 11.1/50 2006-02	General guidelines for the procedure of surface tests according to of magnetic particle- and penetrant method (here: *Chapter 3*)
DIN 25435-2 2021-05	In-service inspections for primary coolant circuit components of light water reactors - Part 2: Magnetic particle and penetrant testing (here: *Magnetic particle testing*)
DIN EN 1369 2013-01	Founding - Magnetic particle testing
DIN EN 10228-1 2016-10	Non-destructive testing of steel forgings - Part 1: Magnetic particle inspection
DIN EN ISO 9934-1 2017-03	Non-destructive testing - Magnetic particle testing - Part 1: General principles
DIN EN ISO 17638 2017-03	Non-destructive testing of welds - Magnetic particle testing
SEP 1935 1982-06	Seam testing of castings of steel - Magnetic powder test

5 Penetrant testing [Flex C]
(Manual surface crack testing of components made of metal and plastics for qualitative evaluation by penetrant testing)

ASME BPVC.V-2023 Sect. V, Article 6 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 6: Liquid penetration examination
ASME BPVC.V-2023 Sect. V, Article 24 Ed. 2024	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection B: Documents adopted by Section V Article 24: SE-165 Standard practice for liquid penetrant examination for general industry
ASTM E 165/E 165M-18 2018	Standard Practice for Liquid Penetrant Testing for General Industry
ASTM E 1417/E 1417M-16 2016	Standard Practice for Liquid Penetrant Testing
AVS D 11.1/50 2006-02	General guidelines for the procedure of surface tests according to of magnetic particle- and penetrant method
DIN 25435-2 2021-05	In-service inspections for primary coolant circuit components of light water reactors - Part 2: Magnetic particle and penetrant testing (here: *Penetrant testing*)
DIN EN 10228-2 2016-10	Non-destructive testing of steel forgings - Part 2: Penetrant testing
DIN EN ISO 3452-1 2014-09	Non-destructive testing - Penetrant testing - Part 1: General principles
DIN EN ISO 10893-4 2011-07	Non-destructive testing of steel tubes - Part 4: Liquid penetrant inspection of seamless and welded steel tubes for the detection of surface imperfections
QR E NDE No. 11.1/40 2021-05	NDE Procedure der IBOQ-G, Rev. x Liquid Penetrant Examination of Products Forms, Weld Edges and Welds
SEP 1936 1982-06	Seam testing of castings of steel - Penetration testing

-Translation-

6 Visual testing [Flex C]

(Visual testing of external and internal surfaces of components made of metal, carbon fiber reinforced materials, composite materials and plastics for qualitative evaluation)

ASME BPVC.V-2023 Sect. V, Article 9 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 9: Visual examination
DIN 25435-4 2021-05	In-service inspections for primary coolant circuit components of light water reactors - Part 4: Visual testing
DIN EN 13018 2016-06	Non-destructive testing - Visual testing - General principles
DIN EN ISO 17637 2017-04	Non-destructive testing of welds - Visual testing of fusion-welded joints
QR E NDE No. 11.6/40 2024-05	NDE Procedure der IBOQ-G, Rev. p Visual Examination

7 Leak testing [Flex C]

(Testing of components made of metal, carbon fibre reinforced materials, composite materials and plastics for localization of leaks by means of bubble emission techniques or for localization of leaks and/or determination of leak rates by means of tracer gas method or pressure change method)

ASME BPVC.V-2023 Sect. V, Article 10 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 10: Leak testing
AVS D 9/50 2019-11	General guidelines for the procedure of the leak tests
DIN EN 1593 1999-11	Non-destructive testing - Leak testing - Bubble emission techniques
DIN EN 12266-1 2012-06	Industrial valves - Testing of metallic valves - Part 1: Pressure tests, test procedures and acceptance criteria - Mandatory requirements
DIN EN 12266-2 2012-04	Industrial valves - Testing of metallic valves - Part 2: Tests, test procedures and acceptance criteria - Supplementary requirements

-Translation-

DIN EN 13184 2001-07	Non-destructive testing - Leak test - Pressure change method
DIN EN ISO 20485 2018-05	Non-destructive testing - Leak testing - Tracer gas method
KTA 3405 2015-11	Leakage Test of the Containment Vessel
QR E NDE No. 11.3/40 2018-05	NDE Procedure der IBOQ-G, Rev. d Leak Testing of Pressure Components or Parts

8 Eddy current testing [Flex C]
(Manual and mechanized eddy current testing of metallic components for the determination of layer thickness/remaining wall thickness or for qualitative evaluation)

DIN 25435-6 2014-01	In-service inspections for primary coolant circuit components of light water reactors - Part 6: Eddy current testing of steam generator heating tubes
DIN 54141-3 1987-02	Non-destructive testing; eddy current testing of pipes and tubes; procedure
DIN EN ISO 15549 2019-10	Non-destructive testing - Eddy current testing - General principles
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

9 Comprehensive standards for NDT [Flex B]

9.1 Comprehensive standards for NDT on pressurized equipment and nuclear energy components
(Non-destructive testing on pressurized equipment and nuclear energy components for qualitative evaluation)

ASME BPVC.III:2023 Sect. III, Article NB/NC/ND-5000 Ed. 2023	The American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code; Section III: Rules for Construction of Nuclear Facility Components; Division 1; Subsection NB - Class 1: Components - Subsection NC - Class 2: Components; Subsection NB - Class 3: Components; Article NB/NC/ND-5000: Examination

-Translation-

ASME BPVC.V:2023 Sect. V, Article 1 Ed. 2023	ASME Boiler and Pressure Vessel Code - Section V: Nondestructive Examination - Subsection A: Nondestructive methods of examination Article 1: General requirements
ASME BPVC.XI:2023 Sect. XI, Article IWA-/IWB-/ IWC-/IWD-2000 Ed. 2023	ASME Boiler and Pressure Vessel Code; Section XI: Rules for Inservice Inspection of Nuclear Power Plant Components - Division 1: Rules for inspection and testing components of light-water cooled plants - Article IWA-/IWB-/IWC-/IWD-2000: Examination and inspection
NBIC Part 1 to 3 Ed. 2019	National Board of Boiler and Pressure Vessel Inspectors - National Board Inspection Code (NBIC) - Part 2: Inspection, incl. NDE, of boilers, pressure vessels and pressure relief devices (Part 1: Installation; Part 3: Repairs and Alterations)
KTA 3201.1 2017-11	Components of the Reactor Coolant Pressure Boundary of Light Water Reactors - Part 1: Materials and Product Forms (here for: *RT, UT, MT*) (here Chapter: *3.3.8, 4.4, 5.4, 6.4, 7.4, 8.4, 9.4, 10.4, 11.4, 12.4, 13.4, 14.4, 16.4, 17.4, 18.4, 19.4, 20.4, 21.4.2.4, 21.4.3.1, 22.4, 23.4, 24.4, 25.6, 26.6, 27.6, 28.2.3.2.3, 29.4.3*)
KTA 3201.3 2017-11	Components of the Reactor Coolant Pressure Boundary of Light Water Reactors - Part 3: Manufacture (here for: *RT, UT, MT, PT*) (here: *Chapter 12*)
KTA 3201.4 2016-11	Components of the reactor coolant pressure boundary of light water reactors - Part 4: Inservice inspections and operational monitoring (here for: *RT, UT, MT, PT, VT, ET*)
KTA 3211.1 2017-11	Pressure and activity retaining components of systems outside the primary circuit - Part 1: Materials (here for: *RT, UT, MT, PT, ET*) (here: *Attachments B, E, F, G, H*)
KTA 3211.3 2017-11	Pressure and Activity Retaining Components of Systems Outside the Primary Circuit - Part 3: Manufacture (here for: *RT, UT, MT, PT*) (here: *Chapter 11*)
KTA 3211.4 2017-11	Pressure and Activity Retaining Components of Systems Outside the Primary Circuit - Part 4: Inservice Inspections and Operational Monitoring (here for: *RT, UT, MT, PT, ET, VT*)

-Translation-

KTA 3401.3 1986-11	Steel Reactor Safety Containment - Part 3: Manufacture (here for: *RT, UT, MT, PT*) (here: *Chapter 6, 9.3, 10.4, 10.8*)
KTA 3401.4 2017-11	Steel Containment Vessels - Part 4: In-service Inspections (here for: *LT, VT*)
SEP 1914 1983-08	Non-destructive testing of fusion-welded seams in pipes of stainless steels (here for: *RT, UT*)
SEP 1916 1989-12	Non-destructive testing of fusion-welded ferritic steel-tubes (here for: *RT, UT, MT, PT*)

9.2 Comprehensive standards for NDT on railway components (Non-destructive testing on railway components for qualitative evaluation)

DIN 27201-7 2020-06	State of railway vehicles - Basic principles and production technology - Part 7: Non-destructive testing (NDT) (here for: *UT, MT, PT, VT*)

abbreviations used:

AD-HP	Pressure Vessel; Production and Testing
ASME BPVC	American Society of Mechanical Engineers; Boiler and Pressure Vessel Code
ASTM	American Society for Testing and Materials
AVS	Standard operation procedure
ET	Eddy current testing
KTA	Nuclear Commission
LT	Leak testing
MT	Magnetic particle testing
NBIC	National Board Inspection Code
PA	Test instruction (In-house method by Framatome GmbH)
PT	Penetrant testing
QR E NDE No. XX.X/XX	Quality Requirement (In-house method by Framatome GmbH)
RT	Radiographic testing
SEP	Iron-Steel-test sheets from the German Iron and Steel Institute
UT	Ultrasonic testing
VT	Visual testing

-Translation-