

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-21039-03-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 06.05.2024

Date of issue: 21.05.2024

Holder of accreditation certificate:

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

with the location

Framatome GmbH
Prüflaboratorium Werkstofftechnik
Paul-Gossen-Straße 100, 91052 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.

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

Page 1 of 7

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Annex to the Accreditation Certificate D-PL-21039-03-00

Tests in the fields:

metallography, electron microscopy of steel and ferrous materials as well as non-ferrous materials; corrosion tests; mechanical-technological material tests

Within the scope of accreditation marked with *, 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 procedures within the flexible scope of accreditation.

1 Metallography ***

ASTM E45-18a 2018	Standard Test Methods for Determining the Inclusion Content of Steel
ASTM E112-13 2013	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
DIN EN 10247 2017-09	Micrographic examination of the non-metallic inclusion content of steels using standard pictures
DIN EN ISO 643 2020-06	Steels - Micrographic determination of the apparent grain size
DIN EN ISO 1463 2021-08	Metallic and oxide coatings - Measurement of coating thickness - Microscopical method
ISO 643 2019-12	Steels - Micrographic determination of the apparent grain size
ISO 1463 2021-05	Metallic and oxide coatings - Measurement of coating thickness - Microscopical method
ISO 4967 2013-07	Steel - Determination of content of non-metallic inclusions - Micrographic method using standard diagrams

Valid from: 06.05.2024

Date of issue: 21.05.2024

Annex to the Accreditation Certificate D-PL-21039-03-00

2 Electron microscopy

FAW-M 0012 E Microanalysis in the scanning and transmission electron microscope
2019-12

3 Corrosion tests

3.1 Corrosion tests without mechanical load ***

ASTM A262-15 2015 (reapproved 2021)	Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
ASTM G28-02 2022	Standard Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys
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
ISO 3651-1 1998-05	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)
ISO 3651-2 1998-05	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

Valid from: 06.05.2024
Date of issue: 21.05.2024

Annex to the Accreditation Certificate D-PL-21039-03-00

3.2 Corrosion tests with simultaneous mechanical load ***

ASTM G36-94(2018) 1994 (reapproved 2018)	Standard practice for Evaluating Stress-Corrosion-Cracking Resistance of Metals and Alloys in a Boiling Magnesium Chloride Solution
DIN EN ISO 7539-4 1995-08	Corrosion of metals and alloys - Stress corrosion testing - Part 4: Preparation and use of uniaxially loaded tension specimens
DIN EN ISO 7539-5 1995-08	Corrosion of metals and alloys - Stress corrosion testing - Part 5: Preparation and use of C-ring specimens
DIN EN ISO 7539-7 2018-05	Corrosion of metals and alloys - Stress corrosion testing - Part 7: Method for slow strain rate testing
ISO 7539-4 1989-12	Corrosion of metals and alloys - Stress corrosion testing - Part 4: Preparation and use of uniaxially loaded tension specimens
ISO 7539-5 1989-12	Corrosion of metals and alloys - Stress corrosion testing - Part 5: Preparation and use of C-ring specimens
ISO 7539-7 2005-02	Corrosion of metals and alloys - Stress corrosion testing - Part 7: Method for slow strain rate testing

Valid from: 06.05.2024

Date of issue: 21.05.2024

Annex to the Accreditation Certificate D-PL-21039-03-00

4 Mechanical-technological material tests

4.1 Strength test ***

DIN EN ISO 6892-1 2020-06	Metallic materials - Tensile testing - Part 1: Method of test at room temperature
ISO 6892-1 2019-11	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
ISO 6892-2 2018-03	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
ISO 6892-3 2015-04	Metallic materials - Tensile testing - Part 3: Method of test at low temperature
ASTM E8/E8M-22 2022	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E21-20 2020	Standard Test Methods for Elevated Temperature Tension Tests of Metallic Materials
DIN EN ISO 4136 2022-09	Destructive tests on welds in metallic materials - Transverse tensile test
ISO 4136 2022-06	Destructive tests on welds in metallic materials - Transverse tensile test
DIN EN ISO 5173 2023-05	Destructive tests on welds in metallic materials - Bend tests
ISO 5173 2023-01	Destructive tests on welds in metallic materials - Bend tests
DIN EN ISO 5178 2019-05	Destructive tests on welds in metallic materials - Longitudinal tensile test on weld metal in fusion welded joints
ISO 5178 2019-01	Destructive tests on welds in metallic materials - Longitudinal tensile test on weld metal in fusion welded joints

Valid from: 06.05.2024

Date of issue: 21.05.2024

Annex to the Accreditation Certificate D-PL-21039-03-00

ASTM E399-20 2020	Standard Test Method for Linear-Elastic Plane-Strain Fracture Toughness of Metallic Materials
ASTM E1820-22e1 2022-09	Standard Test Method for Measurement of Fracture Toughness
ASTM E1921-22 2022	Standard Test Method for Determination of Reference Temperature, T_0 , for Ferritic Steels in the Transition Range
DIN 50106 2016-11	Testing of metallic materials - Compression test at room temperature
DIN EN ISO 148-1 2017-05	Metallic materials - Charpy pendulum impact test - Part 1: Test method
ISO 148-1 2016-10	Metallic materials - Charpy pendulum impact test - Part 1: Test method
DIN EN ISO 9016 2022-07	Destructive tests on welds in metallic materials - Impact tests - Test specimen location, notch orientation and examination
ISO 9016 2022-03	Destructive tests on welds in metallic materials - Impact tests - Test specimen location, notch orientation and examination
DIN EN ISO 14556 2017-05	Metallic materials - Charpy V-notch pendulum impact test - Instrumented test method
ISO 14556 2015-09	Metallic materials - Charpy V-notch pendulum impact test - Instrumented test method

Valid from: 06.05.2024

Date of issue: 21.05.2024

Page 6 of 7

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Annex to the Accreditation Certificate D-PL-21039-03-00

4.2 Hardness test ***

DIN EN ISO 6506-1 2015-02	Metallic materials - Brinell hardness test - Part 1: Test method
ISO 6506-1 2014-10	Metallic materials - Brinell hardness test - Part 1: Test method
DIN EN ISO 6507-1 2018-07	Metallic materials - Vickers hardness test - Part 1: Test method
ISO 6507-1 2018-01	Metallic materials - Vickers hardness test - Part 1: Test method
DIN EN ISO 6508-1 2016-12	Metallic materials - Rockwell hardness test - Part 1: Test method
ISO 6508-1 2016-08	Metallic materials - Rockwell 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
ISO 9015-1 2001-04	Destructive tests on welds in metallic materials - Hardness testing - Part 1: Hardness test on arc welded joints
DIN EN ISO 18203 2022-07	Steel - Determination of the thickness of surface-hardened layers
ISO 18203 2016-12	Steel - Determination of the thickness of surface-hardened layers

Abbreviations used:

ASTM	American Society for Testing and Materials
DIN	German institute for standardization
EN	European Standard
FAW	Technical Instruction of Framatome GmbH
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation

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