

## Deutsche Akkreditierungsstelle GmbH

### Annex to the Accreditation Certificate D-PL-18080-01-00 according to DIN EN ISO/IEC 17025:2018

**Valid from:** 05.07.2021

Date of issue: 05.07.2021

Holder of certificate:

**Zeppelin Aviation & Industrial Service GmbH  
Graf-Zeppelin-Platz 1, 88045 Friedrichshafen**

with the locations:

**Graf-Zeppelin-Platz 1, 88045 Friedrichshafen  
Hermann-Blohm-Straße 5, 20457 Hamburg**

Tests in the fields:

**manual non-destructive testing (radiographic, ultrasonic, penetrant, magnetic particle, eddy current, leakage und visual testing) of metallic materials in the metal-producing and processing industry as well as in system and plant engineering**

**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.**

*The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories. Laboratories that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.*

*The certificate together with the annex reflects the status as indicated by the date of issue.*

*The current status of any given scope of accreditation may be found respectively in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH <https://www.dakks.de/en/content/accredited-bodies-dakks>.*

Abbreviations used: see last page

**Page 1 of 6**

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

**Annex to the accreditation certificate D-PL-18080-01-00**

The test procedures are identified with the following symbols of locations at which they are used:

HH = Hamburg

FN = Friedrichshafen

**1 Manual non-destructive testing**

**1.1 Radiographic testing \*\*\***

**HH, FN**

DIN 85004-9  
2008-12 Pipelines of copper-nickel-alloys - Part 9: General principles for the radiographic examination

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  
(here: *Chapter 6*)

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 20769-1  
2018-12 Non-destructive testing - Radiographic inspection of corrosion and deposits in pipes by X- and gamma rays - Part 1: Tangential radiographic inspection

DIN EN ISO 20769-2  
2018-12 Non-destructive testing - Radiographic inspection of corrosion and deposits in pipes by X- and gamma rays - Part 2: Double wall radiographic inspection

**1.2 Ultrasonic testing \*\*\***

**HH, FN**

AD 2000-Merkblatt HP 5/3  
Annex 1  
2015-04 Non-destructive testing of welded joints - Minimum requirements for non-destructive testing methods  
(here: *Chapter 3 -Ultrasonic Testing*)

DIN 54123  
1980-10 Non-destructive Test; Ultrasonic Method of Testing Claddings, Produced by Welding, Rolling and Explosion  
(*withdrawn standard*)

DIN EN 10160  
1999-09 Ultrasonic testing of steel flat product of thickness equal to or greater than 6 mm (reflection method)

Valid from: 05.07.2021

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**Annex to the accreditation certificate D-PL-18080-01-00**

DIN EN 10228-3 2016-10	Non-destructive testing of steel forgings - Part 3: Ultrasonic testing of ferritic or martensitic steel forgings
DIN EN 10228-4 2016-10	Non-destructive testing of steel forgings - Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings
DIN EN 10308 2002-03	Non-destructive testing - Ultrasonic testing of steel bars
DIN EN 12680-1 2003-06	Founding - Ultrasonic examination - Part 1: Steel castings for general purposes (here: <i>Chapter 5</i> )
DIN EN 12680-3 2012-02	Founding - Ultrasonic testing - Part 3: Spheroidal graphite cast iron castings (here: <i>Chapter 5</i> )
DIN EN ISO 16809 2020-02	Non-destructive testing - Ultrasonic thickness measurement
DIN EN ISO 16826 2014-06	Non-destructive testing - Ultrasonic testing - Examination for discontinuities perpendicular to the surface
DIN EN ISO 17405 2014-10	Non-destructive testing - Ultrasonic testing - Technique of testing claddings produced by welding, rolling and explosion
DIN EN ISO 17640 2019-02	Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment (here: <i>Chapter 8 - 11 and annex A</i> )
DIN EN ISO 22825 2018-02	Non-destructive testing of welds - Ultrasonic testing - Testing of welds in austenitic steels and nickel-based alloys
DIN ISO 4386-1 2015-12	Plain bearings - Metallic multilayer plain bearings - Part 1: Non-destructive ultrasonic testing of bond of thickness $\geq 0,5$ mm
SEP 1920 1984-12	Ultrasonic testing of rolled semi-finished products on internal material discontinuities
SEP 1923 2009-02	Ultrasonic testing of steel forgings to stringent standards, in particular for components in turbine and generator systems

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**Annex to the accreditation certificate D-PL-18080-01-00**

**1.3 Penetrant testing \*\*\***

**HH, FN**

DIN EN 1371-1 2012-02	Founding - Liquid penetrant testing - Part 1: Sand, gravity die and low pressure die castings
DIN EN 1371-2 2015-04	Founding - Liquid penetrant testing - Part 2: Investment castings
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 (here: <i>Chapter 8</i> )
SEP 1936 1982-06	Seam testing of castings of steel; penetration testing ( <i>withdrawn standard</i> )

**1.4 Magnetic particle testing**

**HH, FN**

**1.4.1 Magnet particle testing according to standards \*\*\***

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 (here: <i>Chapter 7 - 14</i> )
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 ( <i>withdrawn standard</i> )

**Annex to the accreditation certificate D-PL-18080-01-00**

**1.4.2 Magnetic particle testing according to other directives**

DGZfP-EM 0 Directive according conduction of magnetic particle testing  
2005-01 (*withdrawn document*)

**1.5 Leakage testing \*\*\***

**HH**

DIN EN 1593 Non-destructive testing - Leak testing - Bubble emission techniques  
1999-11

DIN EN 13184 Non-destructive testing - Leak test - Pressure change method  
2001-07

DIN EN ISO 20485 Non-destructive testing - Leak testing - Tracer gas method  
2018-05

**1.6 Visual testing \*\*\***

**HH, FN**

DIN 25435-4 In-service inspections for primary collant circuit components of light  
2014-01 water reactors - Part 4: Visual testing

DIN EN 1370 Founding - Examination of surface condition  
2012-03

DIN EN 13018 Non-destructive testing - Visual testing - General principles  
2016-06 (*here: Chapter 5 and 6*)

DIN EN ISO 17637 Non-destructive testing of welds - Visual testing of fusion-welded joints  
2017-04

**1.7 Eddy current testing \*\*\***

**HH**

DIN EN ISO 15549 Non-destructive testing - Eddy current testing - General principles  
2019-10 (*here: Chapter 12*)

DIN EN ISO 17643 Non-destructive testing of welds - Eddy current examination of welds  
2015-12 by complex plane analysis

**2 Cross-procedural standards for NDT \*\*\***

**HH, FN**

AGFW - FW446 2020-11	Welded joints on steel pipes in district heating supply- performing, examination and evaluation
DIN EN ISO 17635 2017-04	Non-destructive testing of welds - General rules for metallic materials (here: <i>Chapter 9 and annex A</i> )
DVGW GW 350 2015-06	Welding Joints of Steel Pipelines for Gas and Water Supply - Manufacturing, Testing and Evaluation (here: <i>Chapter 9</i> )
KTA 3201.3 2017-11	Components of the Reactor Coolant Pressure Boundary of Light Water Reactors - Part 3: Manufacture (here: <i>Chapter 12: Non-destructive tests</i> )
KTA 3201.4 2016-11	Components of the reactor coolant pressure boundary of light water reactors - Part 4: Inservice inspections and operational monitoring
KTA 3903 2020-12	Inspection, Testing and Operation of Lifting Equipment in Nuclear Power Plants (here: <i>Annex B: Non-destructive tests</i> )
SEP 1916 1989-12	Non-destructive testing fusion welded ferritic steel pipes
SEP 1917 1994-09	Non-destructive testing of resistance welded pipes of ferritic steels

**Abbreviations used:**

AD HP	Working Group on Pressure Vessels; Manufacturing and Testing
AGFW	Working Group District Heating
DGZfP	German Society for Non-Destructive testing
DIN	German Institute for Standardization
DVGW	German Technical and Scientific Association for Gas and Water
EN	European standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
KTA	Nuclear Safety Standards Commission
SEP	Steel-iron test sheets from the Association of German Ironworkers