Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV
Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition

Accreditation

The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory

Industrieanlagen-Betriebsgesellschaft mbH (IABG)
Betriebsfestigkeitslabor (IBL)
Einsteinstraße 20, 85521 Ottobrunn

is competent under the terms of DIN EN ISO/IEC 17025:2018 to carry out tests in the following fields:

Hardness tests on metallic and polymer materials; metallographic testing of metallic materials; assessing of adhesion behavior of paints and varnishes; surface measurement on components; mechanical-technological tests on metallic and polymer materials; cyclic testing of metallic materials specimen and components; fracture mechanics testing of metallic materials; vibration testing and earthquake simulation; environmental testing of components

The accreditation certificate shall only apply in connection with the notice of accreditation of 10.12.2020 with the accreditation number D-PL-12001-02. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 9 pages.

Registration number of the certificate: D-PL-12001-02-00

Frankfurt am Main
10.12.2020
Dipl.-Ing. (FH) Ralf Egner
Head of Division
Translation issued: 03.02.2021

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

This document is a translation. The definitive version is the original German accreditation certificate
See notes overleaf
The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkkS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkkS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council setting out the requirements for accreditation and market surveillance relating to the marketing of products. DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European cooperation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC). The signatories to these agreements recognise each other’s accreditations.

The up-to-date state of membership can be retrieved from the following websites:

EA:  www.european-accreditation.org
ILAC: www.ilac.org
IAF:  www.iaf.nu
Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-12001-02-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 10.12.2020
Date of issue: 03.02.2021

Holder of certificate:

Industrieanlagen-Betriebsgesellschaft mbH (IABG)
Betriebsfestigkeitslabor (IBL)
Einsteinstraße 20, 85521 Ottobrunn

Tests in the fields:

Hardness tests on metallic and polymer materials; metallographic testing of metallic materials; assessing of adhesion behavior of paints and varnishes; surface measurement on components; mechanical-technological tests on metallic and polymer materials; cyclic testing of metallic materials specimen and components; fracture mechanics testing of metallic materials; vibration testing and earthquake simulation; environmental testing of components

Within the given testing field marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS the free choice of standard or equivalent testing methods.
The listed testing methods are exemplary. The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

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 in DIN EN ISO/IEC 17025 are written in language relevant to operations of testing laboratories and operate generally in accordance with the principles of DIN EN ISO 9001.

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

Abbreviations used: see last page

This document is a translation. The definitive version is the original German annex to the accreditation certificate.
1. Determination of the hardness of metallic and polymer materials using hardness test methods *

- **DIN EN ISO 6506-1 2015-02**
  Metallic materials - Brinell hardness test - Part 1: Test method

- **ASTM E 10 2018**
  Standard Test Method for Brinell Hardness of Metallic Materials

- **DIN EN ISO 6507-1 2018-07**
  Metallic materials - Vickers hardness test - Part 1: Test method

- **ASTM E 384 2017**
  Standard Test Method for Microindentation Hardness of Materials

- **DIN EN ISO 6508-1 2016-12**
  Metallic materials - Rockwell hardness test - Part 1: Test method (here: C scale)

- **ASTM E 18 2019**
  Standard Test Methods for Rockwell Hardness of Metallic Materials

- **DIN ISO 7619-1 2012-02**
  Rubber, vulcanized or thermoplastic - Determination of indentation hardness - Part 1: Durometer method (Shore hardness)

- **DIN EN ISO 868 2003-10**
  Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)

- **DIN EN ISO 2639 2003-04**
  Steels - Determination and verification of the depth of carburized and hardened cases

- **DIN EN ISO 3887 2018-05**
  Steels - Determination of the depth of decarburization (here: chapter 5.3 - Method of measuring microhardness)

- **DIN EN 10328 2005-04**
  Iron and steel - Determination of the conventional depth of hardening after surface heating

- **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

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2 Metallographic tests

2.1 Determination of non-metallic inclusions (steel purity) in steels using light microscopy *

DIN EN 10247 2017-09
Micrographic examination of the non-metallic inclusion content of steels using standard pictures

ASTM E 45 2013
Standard Test Methods for Determining the Inclusion Content of Steel

2.2 Determination of the recognizable ferrite or austenite grain size of steels (determination of the mean grain size) using micro photographic methods *

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

2.3 Other metallographic tests ***

DIN EN ISO 3887 2018-05
Steels - Determination of the depth of decarburization (here: chapter 5.2 - metallographic tests)

DIN EN ISO 945-1 2010-09
Microstructure of cast irons - Part 1: Graphite classification by visual analysis

DIN EN ISO 1463 2004-08
Metallic and oxide coatings - Measurement of coating thickness - Microscopical method

SEP 1520 1998-09
Microscopic examination of carbide structure in steels by means of diagram series

Valid from: 10.12.2020
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3 Adhesion behavior of paints and varnishes

3.1 Evaluation of the degree of blistering of paints and varnishes on steel by comparison with images *

DIN EN ISO 4628-2 2016-07 Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering


3.2 Evaluation of the degree of rusting of paints and varnishes on steel by comparison with images *

DIN EN ISO 4628-3 2016-07 Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting

ASTM D 610 2008 Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces

3.3 Other tests on the adhesion behavior of paints and varnishes ***

DIN EN ISO 2409 2013-06 Paints and varnishes - Cross-cut test

ASTM D 3359 2017 Standard Test Methods for Rating Adhesion by Tape Test

4 Surface testing of components using the replica technique *

DIN 54150 1977-08 Non-destructive testing; impression methods for surface examination (Replica-technique) (withdrawn standard)

Valid from: 10.12.2020
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5 Mechanical-technological tests

5.1 Determination of the quasi-static properties of metallic materials, plastics and plastic composites at different temperatures using tensile, compression and shear tests *

DIN EN ISO 6892-1 2017-02 Metallic materials - Tensile testing - Part 1: Method of test at room temperature (here: method B)

DIN EN ISO 6892-2 2011-05 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

ASTM D 3518 2013 Standard Test Method for In-Plane Shear Response of Polymer Matrix Composite Materials by Tensile Test of a ±45° Laminate

ASTM D 3039 2014 Standard test method for tensile properties of polymer matrix composite materials

5.2 Determination of material parameters under vibration loads of metallic materials and components using fatigue tests *

DIN 50100 2016-12 Load controlled fatigue testing - Execution and evaluation of cyclic tests at constant load amplitudes on metallic specimens and components

ASTM E 466 2015 Standard Practice for Conducting Force Controlled Constant Amplitude Axial Fatigue Tests of Metallic Materials

5.3 Determination of the crack growth behavior of metallic materials using fracture mechanical tests *

ISO 12108 2018-07 Metallic materials - Fatigue testing - Fatigue crack growth method


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ASTM E 399  
Standard Test Method for Linear-Elastic Plane-Strain Fracture Toughness $K_t$ of Metallic Materials  
2019

6 Determination of the vibration and earthquake resistance of facilities and systems in the fields of energy, automotive, aviation, rail and medical technology using vibration tests *

IEEE 693  
Recommended Practice for Seismic Design of Substations  
2018

ANSI/IEEE 344  
Recommended Practice for Seismic Qualification for Class 1E Equipment for Nuclear Power Generating Stations  
2004

ANSI/IEEE 382  
Standard for Qualification of Safety-Related Actuators for Nuclear Power Generating Stations  
2006

KTA 2201.4  
Design of nuclear power plants against seismic effects -  
Part 4: Plant components  
2012-11

KTA 3504  
Electric drives of the safety system in nuclear power plants  
2015-11

DIN EN 60068-2-6  
Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)  
2008-10

DIN EN 60068-2-57  
Environmental testing - Part 2-57: Tests - Test Ff: Vibration - Time-history and sine-beat method  
2015-10

DIN EN 60068-2-64  
Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance  
2009-04

DIN EN 300019-2-3  
Environmental Engineering (EE) - Environmental conditions and environmental tests for telecommunications equipment - Part 2-3: Specification of environmental tests; Stationary use at weatherprotected locations  
2016-07

DIN EN 300019-2-4  
Environmental Engineering (EE) - Environmental conditions and environmental tests for telecommunications equipment - Part 2-4: Specification of environmental tests; Stationary use at non-weatherprotected locations  
2016-07

DIN EN 60255-21-3  
Electrical relays - Part 21: Vibration, shock, bump and seismic tests on measuring relays and protection equipment; section 3: Seismic tests  
1995-11

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IEC 60980 1989-06
Recommended practices for seismic qualification of electrical equipment of the safety system for nuclear generating stations

DIN EN 61373 2011-04
Railway applications - Rolling stock equipment - Shock and vibration tests

DIN EN 61587-2 2012-06
Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 2: Seismic tests for cabinets and racks

DIN EN 62271-207 2013-02
High-voltage switchgear and controlgear - Part 207: Seismic qualification for gas-insulated switchgear assemblies for rated voltages above 52 kV

DIN EN 1998-1 2010-12

GR-63-CORE NEBS 2012-04
Network Equipment-Building System Requirements: Physical Protection

IEC TS 62271-210 2013
High-voltage switchgear and controlgear - Part 210: Seismic qualification for metal enclosed and solid-insulation enclosed switchgear and controlgear assemblies for rated voltages above 1 kV and up to and including 52 kV

ICC-ES AC156 2015-05
Acceptance criteria for seismic certification by shake-table testing of nonstructural components

RCC-E 2016
Design and construction rules for electrical equipment of PWR nuclear islands
(here: only seismic vibration tests)

IEC/TR 62271-300 2006
High-voltage switchgear and controlgear - Part 300: Seismic qualification of alternating current circuit-breakers
(here: only seismic vibration tests)

IEC/IEEE 60780-323 2016-04
IEC/IEEE International Standard - Nuclear facilities - Electrical equipment important to safety - Qualification

STANAG 4370 2014-09
ENVIRONMENTAL TESTING
AECTP-400: Mechanical environmental tests - Method 401: Vibration
(here: only seismic vibration tests)
(withdrawn document)

Valid from: 10.12.2020
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8 Environmental tests ***

DIN EN 60068-2-1 2008-01
Environmental testing - Part 2-1: Tests - Test A: Cold

DIN EN 60068-2-2 2008-05
Environmental testing - Part 2-2: Tests - Test B: Dry heat

DIN EN 60068-2-14 2010-04
Environmental testing - Part 2-14: Tests - Test N: Change of temperature
(here: Test Na and Nb)

DIN EN 60068-2-30 2006-06
Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic
(12 h + 12 h cycle)

DIN EN 60068-2-38 2010-06
Environmental testing - Part 2-38: Tests - Test Z/AD: Composite
temperature/humidity cyclic test

DIN EN 60068-2-78 2014-02
Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state

ISO 16750-4 2010-04
Road vehicles - Environmental conditions and testing for electrical and
electronic equipment - Part 4: Climatic loads

RTCA DO-160 G 2010
Radio Technical Commission for Aeronautics Environmental Conditions and Test Procedure for Airborne Equipment
(here:
Section 4.5.1 to 4.5.5 - Temperature and Altitude
Section 5 - Temperature Variation
Section 6 - Humidity)
Abbreviations used:

ANSI  American National Standards Institution  
ASTM  American Society for Testing and Materials  
AECTP  Allied Environmental Conditions and Test Publication  
DIN  German Institute for Standardization  
EN  European Standard  
GR  Generic Requirements  
NEBS  Network Equipment Building Systems  
ICC-ES AC  International Code Council Evaluation Service Acceptance Criteria  
IEC  International Electrotechnical Commission  
IEEE  Institute of Electrical and Electronics Engineers  
ISO  International Organization for Standardization  
KTA  Nuclear Safety Standards Commission  
RCC-E  Règles de conception et de construction des matériels des chaudières électronucléaires  
RTCA  Radio Technical Commission for Aeronautics  
SEP  Steel-iron test sheets from the Association of German Ironworkers  
STANAG  Standardization Agreement  

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