

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-11086-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 22.10.2021

Date of issue: 22.10.2021

Holder of certificate:

IFO - Institut für Oberflächentechnik GmbH
Alexander-von-Humboldt-Straße 19, 73529 Schwäbisch Gmünd

Tests in the fields:

Analysis of coatings or surfaces on metals, plastics against corrosion, climatic or environmental stresses and other stress factors;

Corrosion analysis, including chemical, physico-chemical tests on layers of metallic and non-metallic materials and components such as surfaces of metals, plastics and coatings; Analysis of mechanical properties of coatings;

Analysis of performance characteristics of coatings with selected non-destructive 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.

Within the scopes of accreditation 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 testing laboratory maintains a current list of all testing methods 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

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

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1. Chemical and physico-chemical tests on layers and corrosion tests*

ISO 2143 2010-07	Anodizing of aluminium and its alloys – Estimation of loss of absorptive power of anodic oxidation coatings after sealing – Dye-spot test with prior acid treatment
DIN EN ISO 2143 2010-12	Anodizing of aluminium and its alloys – Estimation of loss of absorptive power of anodic oxidation coatings after sealing – Dye-spot test with prior acid treatment
DIN EN ISO 3210 2010-12	Anodizing of aluminium and its alloys – Assessment of quality of sealed anodic oxidation coatings by measurement of the loss of mass after immersion in phosphoric acid/chromic acid solution
DIN EN ISO 10523 2012-04	Water quality – Determination of pH
DIN EN 12373-4 1999-04	Aluminium and aluminium alloys – Anodizing – Part 4: Estimation of loss of absorptive power of anodic oxidation coatings after sealing by dye spot test with prior acid treatment <i>(standard withdrawn)</i>
DIN EN 27888 1993-11	Water quality; determination of electrical conductivity
DIN 38404-4 1976-12	Determination of temperature (C 4)

2. Analysis of mechanical properties of coatings*

DIN EN ISO 1519 2011-04	Paints and varnishes – Bend test (cylindrical mandrel)
DIN EN ISO 1520 2007-11	Paints and varnishes – Cupping test
DIN EN ISO 2409 2013-06	Paints and varnishes - Cross-cut test

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DIN EN ISO 2815 2003-10	Paints and varnishes – Buchholz indentation test
DIN EN ISO 4624 2016-08	Paints and varnishes – Pull-off test for adhesion Method B
DIN EN ISO 2812-1 2018-03	Paints and varnishes – Determination of resistance to liquids – Part 1: Immersion in liquids other than water
DIN EN ISO 2812-2 2019-03	Paints and varnishes – Determination of resistance to liquids – Part 2: Water immersion method
DIN EN ISO 2812-3 2019-08	Paints and varnishes – Determination of resistance to liquids – Part 3: Method using an absorbent medium
DIN EN ISO 2812-4 2018-03	Paints and varnishes – Determination of resistance to liquids – Part 4: Spotting methods
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
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
DIN EN ISO 4628-4 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 4: Assessment of degree of cracking
DIN EN ISO 4628-5 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 5: Assessment of degree of flaking
DIN EN ISO 4628-6 2011-12	Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 6: Assessment of degree of chalking by tape method

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DIN EN ISO 4628-8 2013-03	Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 8: Assessment of degree of delamination and corrosion around a scribe or other artificial defect
DIN EN ISO 4628-10 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 10: Assessment of degree of filiform corrosion
DIN EN ISO 6272-1 2011-11	Paints and varnishes – Rapid-deformation (impact resistance) tests – Part 1: Falling-weight test, large-area indenter
DIN EN ISO 6272-2 2011-11	Paints and varnishes – Rapid-deformation (impact resistance) tests – Part 2: Falling-weight test, small-area indenter
DIN EN ISO 6860 2006-06	Paints and varnishes – Bend test (conical mandrel)
DIN EN ISO 16276-1 2007-08	Corrosion protection of steel structures by protective paint systems – Assessment of, and acceptance criteria for, the adhesion/cohesion (fracture strength) of a coating
ASTM D 522-93a 1993	Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings
ASTM D 2794 2019	Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
BS ISO 18771 2019-02	Anodizing of aluminium and its alloys – Method to test the surface abrasion resistance using glass-coated abrasive paper
GSB AL 631-7 / ST 663-7 2020-07	International Quality Regulations For The Coating of Aluminium Building Components – Milling and Drilling <u>here:</u> section 5.6
Qualicoat Specification 2021-01	Specifications for a quality label for liquid and powder coatings on aluminium for architectural applications, <u>here:</u> section 2.20 – Water spot test
Qualicoat Specification 2021-01	Specifications for a quality label for liquid and powder coatings on aluminium for architectural applications, <u>here:</u> section 2.21 - Scratch and mar resistance test (Martindale)

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GRM Testing guidelines
2019-10 Friction test (cleaning of metal facades)
Rubbing test
here: section 1-5.2

3. Analysis of optical properties/colour fastness*

ISO 7724-2
1984-10 Paints and varnishes – Colorimetry – Part 2: Colour measurement
(*standard withdrawn*)

DIN EN ISO 2813
2015-02 Reflectometer as a means for gloss assessment of plane surfaces of
paint coatings and plastics

DIN 11664-4
2019-04 Colorimetry – Part 4: CIE 1976 L*a*b* colour space

4. Analysis of resistance to media due to ageing, climatic and environmental stresses and other stress factors of coated aluminium, steels and galvanised coatings**

ISO 105-A02
1993-09 Tests for colour fastness – Part A02: Grey scale for assessing change in
colour

DIN EN ISO 105-B02
2014-11 Tests for colour fastness – Part B02: Colour fastness to artificial light:
Xenon arc fading lamp test

DIN EN ISO 2931
2018-04 Anodizing of aluminium and its alloys – Assessment of quality of
sealed anodic oxidation coatings by measurement of admittance

DIN EN ISO 4623-2
2016-12 Paints and varnishes – Determination of resistance to filiform
corrosion – Part 2: Aluminium substrates

GSB AL 631-7 / ST 663-7
2020-07 Filiform corrosion
here: section 7.4

GSB AL 631-7 / ST 663-7
2020-07 International Quality Regulations For The Coating of Aluminium
Building Components – Mortar test
here: section 8.2.1

GSB AL 631-7 / ST 663-7
2020-07 GSB-Caustic soda test (alternative)
here: section 8.8.2

QIB
2019-11 Machu test (short-term corrosion test for aluminium, steel and
galvanised steel)
here: section E.14

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Qualicoat Specification 2021-01	Machu test (short-term corrosion test, only on profile pieces) <u>here:</u> section 2.11
Qualicoat Specification 2021-01	Resistance to mortar <u>here:</u> section 2.15
Qualicoat Specification 2021-01	Filiform corrosion test as per ISO 4623-2 2016-08 <u>here:</u> section 2.19
GRM Testing guidelines 2019-10	Cleaning of metal facades – Immersion test (testing of cleaning agents for cleaning metal facades) <u>here:</u> section 1-5.3
GRM Testing guidelines 2019-10	Cleaning of metal facades – Alternating immersion test (testing of cleaning agents for cleaning metal facades) <u>here:</u> section 1-5.4
GRM Testing guidelines 2019-10	Cleaning of metal facades – Cotton wool test (testing of cleaning agents for cleaning metal facades) <u>here:</u> section 1-5.5
GSB AL 631-7 / ST 663-7 2020-07	Cross-Linking Tests MEK Test (for Stoving and Two-Component Liquid Lacquers) Part VII Section 7.1
GSB AL 631-7 / ST 663-7 2020-07	Cross-Linking Tests Acetone Test (for Stoving and Two-Component Liquid Lacquers) <u>here:</u> section 6.1
GSB AL 631-7 / ST 663-7 2020-07	GSB-Boiling Water or Pressure Cooker Test <u>here:</u> section 7.5
GSB AL 631-7 / ST 663-7 2020-07	Resistance to Moisture <u>here:</u> section 8.1
QIB 2019-11	Cross-linking degree test – Test to determine the degree of hardening for organic coatings <u>here:</u> section G.18
QIB 2019-11	Boiling test to check pretreatment <u>here:</u> section G.19
Qualicoat Specification 2021-01	Cross-linking degree test Section 2.14
Qualicoat Specification 2021-01	Resistance to boiling water / boiling test Section 2.16

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Type of test	Test parameter	Characteristic test methods
Environmental testing	Temperature	DIN EN 60068-2-52
	Humidity (without condensation)	DIN EN ISO 9227 DIN 50018
	Humidity (with condensation)	DIN EN ISO 3231 ISO 22479
	Salt concentration	DIN EN ISO 12944-6/9
	Relative gas volume	VDA 621-415 DIN EN ISO 11997 DIN EN ISO 6270-1/2 SAE J 2334
Weathering tests (xenon)	Radiation intensity	DIN EN ISO 16474-2
	Temperature	DIN EN ISO 4892-2
	Black standard temperature	
	Humidity	
Weathering tests (UV)	Radiation intensity	DIN EN ISO 16474-3
	Temperature	DIN EN ISO 4892-3 GSB ST 631, Section 20.1

5. Analysis of performance characteristics of coatings or surfaces on metals, plastics with selected non-destructive tests*

DIN EN ISO 2178 2016-11	Non-magnetic coatings on magnetic substrates – Measurement of coating thickness – Magnetic method
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
In-house method 02 2008-07	Materialography – General section preparation / determination of layer thickness

6. Testing of technical cleanliness of automotive parts*

6.1 Particle counting

VDA 19 Teil 1 2015-03	Testing of technical cleanliness – Particle contamination of functionally relevant automotive parts Section 8.2.2
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6.2 Gravimetric analysis

VDA 19 Teil 1 2015-03	Testing of technical cleanliness – Particle contamination of functionally relevant automotive parts Section 8.2.1
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Abbreviations used:

ASTM	American Society for Testing and Materials
BS	British Standard
DBL	Daimler Benz delivery specifications
DIN	Deutsches Institut für Normung e.V. (German Institute for Standardization)
EN	European standard
GSB ST	Qualitätsgemeinschaft Stückbeschichtung von Stahlbauteilen (Quality Association for the Piecework Coating of Building Components)
GRM	Gütegemeinschaft Reinigung von Fassaden e.V.
In-house method	In-house method of IfO – Institut für Oberflächentechnik GmbH
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
QIB	Qualitätsgemeinschaft Industriebeschichtung (Quality Association for Industrial Coating)
Qualicoat Specification	Quality association for organic coating of aluminium components in the architectural sector
SAE	American National Standards Institute
VDA	Verband der Automobilindustrie (Association of the German Automotive Industry)