

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-11140-07-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 16.12.2020

Date of issue: 16.12.2020

Holder of certificate:

**Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.
Hansastraße 27 c, 80686 München**

for its testing laboratory

**Fraunhofer-Institut für Produktionstechnik und Automatisierung IPA, Stuttgart,
Abteilung Beschichtungssystem- und Lackiertechnik
Allmandring 37 and Nobelstraße 12, 70569 Stuttgart**

Tests in the fields:

selected analytical and application test methods for surface, paint and coating technology; corrosion, climatic, physical, layer thickness and resistance tests on coated materials; determination of parameters for raw paint materials, coating materials, coatings, plastics, polymers and material surfaces, e.g. within the scope of failure analyses; determination of fogging and burn behavior of materials for the interior of motor vehicles

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards marked by * with different issue dates. The testing laboratory maintains a current list of all standards 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>*

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1 Selected analytical tests

SAA AS 01.0 2020-08	Identification of the binder type by IR Spectroscopy
SAA AS 03.0 2019-12	Determination of glass transition temperature and melting point by Differential Scanning Calorimetry (DSC)

2 Corrosion and climatic tests

DIN EN ISO 6270-1* 2018-04	Paints and varnishes - Determination of resistance to humidity - Part 1: Condensation (single-sided exposure)
DIN EN ISO 6270-2* 2018-04	Paints and varnishes - Determination of resistance to humidity - Part 2: Condensation (in-cabinet exposure with heated water reservoir)
DIN EN ISO 9227* 2017-07	Corrosion tests in artificial atmospheres - salt spray tests <i>(alternative: with neutral sodium chloride solution (NSS method))</i>
DIN EN ISO 11997-1* 2018-01	Paints and varnishes - Determination of resistance to cyclic corrosion conditions - Part 1: Wet (salt fog)/dry/humid <i>(here: cycle B)</i>
DBL 5416 2017-08	Supply Specification - Parts Manufactured from Thermoplastics for Paneling, Housings and Functional Parts for External Applications- Layer thickness <i>(here: table 23, testing No A.2.8, Hot water test table 23, testing No A.2.7, Condensation atmosphere with constant-humidity table 25, testing No A.2.10, Temperature change test table 26, testing No A.2.11, Heat aging section 12.7, Cyclic climate test)</i>
DBL 5425 2020-07	Coating / Paintwork of Plastic Parts in the Vehicle Exterior <i>(hier: Annex A.1.5, Condensation atmosphere with constant-humidity Annex A.1.6, Hot water test Annex A.1.8, Temperature change test Annex A.1.9, Heat aging Annex 8.8, Cyclic climate test)</i>

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DBL 7384
2017-11

Supply Specification - Coating of Plastic Parts in Vehicle Interiors - Layer thickness
(here: *section 8.8, Hot water test*
section 8.7, Constant condensed water climate
section 8.9, Oven aging test
section 8.17, Thermal cycling test
section 8.19, Hydrolysis)

3 Measurement of coating thickness

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

DIN EN ISO 2808*
2019-12

Paints and varnishes - Determination of film thickness
(here: *section 5.4.4 method 6A - Cross-grind/Cross-cut method*)

DBL 7384
2017-11

Supply Specification - Coating of Plastic Parts in Vehicle Interiors - Layer thickness
(here: *section 8.4, Coat thickness*)

4 Physical tests

DIN EN ISO 2409*
2013-06

Paints and varnishes - Cross-cut test

VDMA-Einheitsblatt 24364
2018-05

Testing for paint wetting impairment substances (PWIS-conformity)

DBL 5416
2017-08

Supply Specification - Parts Manufactured from Thermo-plastics for Paneling, Housings and Functional Parts for External Applications - Cross cut test with adhesive tape application and removal
(here: *section 12.4, Cross cut with adhesive tape application and removal*
section 12.5, Multi-impact-test
section 12.6, Pressure-water-jetting test (Steam-jetting test))

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DBL 5425
2020-07

Coating / Paintwork of Plastic Parts in the Vehicle Exterior
(hier: *section 8.5, Cross cut with adhesive tape application and removal*
section 8.6, Multi-impact-test
section 8.7, Pressure-water-jetting test)

DBL 7384
2017-11

Supply Specification - Coating of Plastic Parts in Vehicle Interiors -
Cross cut with adhesive tape pull-off test
(here: *section 8.5, Cross-cut with adhesive tape pull-off*
section 8.12, Sensitivity to scribing
section 8.13, Abrasion test)

MBN 10494-3
2016-03

Paint compatibility test
(here: section 5.14)

5 Resistance tests

DIN EN ISO 20566*
2013-06

Paints and varnishes - Determination of the scratch resistance of a
coating system using a laboratory-scale car-wash

DBL 7384
2017-11

Supply Specification - Coating of Plastic Parts in Vehicle Interiors -
Care resistance
(here: *section 8.10, Care resistance test,*
section 8.11, Resistance under influence of temperature)

MBN 10494-5
2016-03

Paint Test Methods - Part 5: Technical-Mechanical Tests
(here: *section 5.8.2, Wipe scratch resistance: crockmeter test*)

6 Determination of fogging characteristics

DIN 75201*
2011-11

Determination of the fogging characteristics of trim materials in the
interior of automobiles

7 Determination of burning behaviour

DIN 75200*
1980-09

Determination of burning behaviour of interior materials in motor
vehicles

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Abbreviations used:

DBL	Daimler Benz supply specification
DIN	German Institute for Standardization
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
MBN	Work standard of Mercedes-Benz AG
SAA	Standard operating procedure of Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e. V., Department Coating Systems and Painting Technology
VDMA	German Engineering Federation