

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-14052-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 16.06.2022

Date of issue: 16.06.2022

Holder of certificate:

imat-uve gmbh

for their sites

**Krefelder Straße 679-691, 41066 Mönchengladbach
Willicher Damm 113, Einheit F, 41066 Mönchengladbach
Gottlob-Armbrust-Straße 18, 71296 Heimsheim
Hedelfinger Straße 61, 70327 Stuttgart**

Tests in the fields:

selected tests of airborne organic pollutants in the context of indoor air measurements and test chamber analysis;
selected physical, physico-chemical and chemical tests as well as emission tests of raw materials, pre- and end products as well as component parts of the automotive industry, in particular of polymeric materials and products from renewable raw materials;
temperature, humidity, solar simulation (halogenide spotlight) as well as outdoor weathering, hot light aging, mechanical continuous stress as well as in their combination environmental simulation tests (qualification tests) and measurements of length, brightness, color and force and deformation and change of pre- and end products as well as component parts of the automotive industry;
specific tests of plastics and textiles

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 can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de/en/content/accredited-bodies-dakks>.*

Abbreviations used: see last page

Page 1 of 33

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

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.

The test methods are marked with the listed symbols of the locations, where they are implemented:

M = Mönchengladbach, Krefelder Straße H= Heimsheim S = Stuttgart

At Mönchengladbach, Willicher Damm site sampling and sample preparation are carried out.

Index

	Page
1 Examination of emission behavior from organics out of polymeric material and components, leather, derived timber products and textiles, predominantly for the use in motor vehicles interior	4
1.1 Examination of emission behavior from organics out of polymeric material, leather, derived timber products and textiles, predominantly for the use in motor vehicles interior	4
1.1.1 Determination of the fogging characteristics using Fogging Apparatus*	4
1.1.2 Formaldehyde Emission (photometric measurement) *	4
1.1.3 Determination of the emission from formaldehyde and other carbonyl compounds using HPLC with standard-detectors (UV) *	5
1.1.4 Determination of the odor characteristics of materials in motor vehicles using sensory examination *	5
1.1.5 Determination of volatile organic compounds using gas chromatography with standard detectors (FID) and mass selective detection (MSD) *	6
1.2 Determination of organic emissions of building products as well as automobile interior trim components and component constituents	6
1.2.1 Examination of emission behavior of building products and components or component constituents by climate testing in emission test chambers and sampling indoor air of test chamber *	6
1.2.2 Examination of emission behavior of components or component constituents of motor vehicle interior by storage in sample bags or micro-scale chambers and sampling indoor air *	7
1.2.3 Determination of formaldehyde and other carbonyl compounds in the indoor air from test chambers using HPLC with standard-detectors (UV-, UV-fluorescence-detection) *	8
1.2.4 Determination of volatile organics and groups of substances in the inside air out of test chambers using gas chromatography with mass selective detection (GC-MS) and chemiluminescence-detection (GC-TEA) *	8
1.2.5 Determination of Odor characteristics of indoor air of test chambers *	9
1.2.6 Determination of volatile compounds and groups of substances in the indoor air of test chambers using photometry *	9

Annex to the accreditation certificate D-PL-14052-01-00

2	Quantitative analysis of selective parameters and analytes in polymeric material, leather and textiles, predominantly for the use in vehicle interior or in synthetic turf systems.	9
2.1	Gravimetric determination of extractable properties from mineral filler, parts of glass and ashes as well as volatile substances and water content *	9
2.2	Determination of organic compounds and groups of substances using gas chromatography with standard-detectors (FID, ECD) and mass selective detection (MSD)	11
2.4	Determination of Formaldehyde using photometry *	11
2.5	Determination of Formaldehyde and other carbonyl compounds by HPLC with standard-detectors (UV)	11
2.6	Determination of selected UV-stabilizers using HPLC in polymeric material with standard-detectors (HPLC-UV-detection)	11
3	Determination of flammability of materials, predominantly in use for motor vehicle interior.	11
4	Mechanical characteristics and physical properties of polymeric material and components, leather and textiles, predominantly for the use in vehicle interior as well as sports grounds..	12
4.1	Examination of mechanical characteristics of plastics and textiles *	12
4.1.1	Flexural tests of plastics *	13
4.1.2	Tensile tests of plastic materials and textiles *	13
4.1.3	Compression test on foamed plastics *	14
4.1.4	Determination of strength by impact and the hardness of plastics *	14
4.1.5	Determination of resistance to stress cracking*	15
4.2	Determination of selective physical properties of plastics, leather and textiles *	16
4.2.1	Determination of density, raw density, mass by area and thickness of plastics, leather and textiles by weighing and length measurement *	17
5	Durability-, authenticity- and environmental and natural weathering tests	18
5.1	Durability and fastness against ageing caused by environmental influences of laquer- or other material surfaces, textiles, components and component constituents, predominantly for the use in motor vehicle interior and exterior*	18
5.2	Fastness and durability of laquer- or other material surfaces and textiles against mechanic exposures as rubbing and scratching as well as with contact with test media or with pollution and cleaning *	20
5.3	Colour fastness and durability of laquer- or other material surfaces against artificial light and weathering with xenon lamps *	25
5.4	Environmental tests with temperature, humidity, sun simulation (halogenide-emitter), mechanical endurance and in combination (qualification tests) on pre- and end-products as well as automobile industry components *	26
5.4.1	Measurement of coating thickness	29
5.4.2	Infrared test	29
5.5	Resistance of paint or other surfaces material to mechanical stress like stone impact or steam jet	29
5.5.1	Stone impact test *	29
5.5.2	steam jet test *	30
5.6	Ageing / environmental simulation tests at metallic and non-metallic materials and component parts as well as its evaluation	30
5.6.1	Corrosion test *	30

Valid from: 16.06.2022

Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

1 Examination of emission behavior from organics out of polymeric material and components, leather, derived timber products and textiles, predominantly for the use in motor vehicles interior

1.1 Examination of emission behavior from organics out of polymeric material, leather, derived timber products and textiles, predominantly for the use in motor vehicles

1.1.1 Determination of the fogging characteristics using Fogging Apparatus *

DIN 75201 2011-11	Determination of the fogging characteristics of trim materials in the interior of Automobiles	M
DIN EN ISO 17071 2011-12	Leather - Physical and mechanical tests - Determination of fogging characteristics	M
ISO 6452 2007-06	Rubber- or plastics-coated fabrics - Determination of fogging characteristics of trim materials in the interior of automobiles	M
VW PV 3015 1994-05	Non-Metallic Materials for Interior Trim - Determining Condensable Constituents (G)	M
DIN EN 14288 2004-03	Leather - Physical and mechanicals tests - Determination of fogging	
SAE J 1756 2006-08	Determination of the Fogging Characteristics of Interior Automotive Materials	M

1.1.2 Formaldehyde Emission (photometric measurement) *

VDA 275 1994-07	Moulded composites and fleeces for vehicles; determination of formaldehyde release (Test procedure called modified flask method)	M
VW PV 3925 2009-06	Polymer Materials - Measuring Emissions of Formaldehyde	M
DIN EN 717-3 1996-05	Wood-based panels - Determination of formaldehyde release - Part 3: Formaldehyde release by the flask method	M

Annex to the accreditation certificate D-PL-14052-01-00

1.1.3 Determination of the emission from formaldehyde and other carbonyl compounds using HPLC with standard-detectors (UV) *

VDA 275 1994-07	Moulded composites and fleeces for vehicles; determination of formaldehyde release (Test procedure called modified flask method) (Modification: <i>Measurement with HPLC after derivatisation with DNPH</i>)	M
GM/ Opel GMW 15635 2012-08	Determination of Aldehyde and Ketone Emissions from Interior Materials (application to C2 to C6- Carbonyles)	M
BMW AA-0061 2014-02	Formaldehyde emission from non-metallic materials and components, determined by HPLC (Formaldehyde, Acetaldehyde)	M
Ford FLTM BZ 156-01-B 2011-07	Determination of Aldehyde and Ketone Emission from non metallic Components, Parts and Materials in Vehicle Interiors by High Performance Liquid Chromatography (HPLC)	M

1.1.4 Determination of the odor characteristics of materials in motor vehicles using sensory examination *

VDA 270 2018-06	Determination of the odor characteristics of trim materials in motor vehicles	M
Ford FLTM BO 131-03 2017-05	Ford Laboratory Test Method - interior odor test	M
PSA D10 5517 2015-11	PSA PEUGEOT - CITROEN - Parts in Passenger Compartment and Boot - Assessment of Odour Strength	M
GMW 3205 2016-08	GM; Determining the Resistance to Odor Propagation of Interior Materials	M
TSM 0505 G 2013-05	Toyota; Smell Quality of non-metallic materials	M
PV 3900 2000-08	Components in Passenger Compartment - Odor Test	M

Annex to the accreditation certificate D-PL-14052-01-00

VCS 1027, 2729 Volvo; Odour of trim materials in vehicles M
2016-11

1.1.5 Determination of volatile organic compounds using gas chromatography with standard detectors (FID) and mass selective detection (MSD) *

VDA 277 Nonmetallic materials of automotive interior of; M
1995-01 determination of release of organic compounds

VDA 278 Thermal desorption analysis of organic emissions for M
2011-10 characterisation of nonmetallic materials for automotive

1.2 Determination of organic emissions of building products as well as automobile interior trim components and component constituents

1.2.1 Examination of emission behavior of building products and components or component constituents by climate testing in emission test chambers and sampling indoor air of test chamber *

S: Chamber test, FID-Measurement, Sampling, Fogging, BTXES and VOC-Screening;

M: Analytik Aldehyde, Ketone, Amine, Phthalate and Nitrosamine

Type of test	Measurand/ test parameter	Load range	Characteristic test processes
Emission chamber test	Test chamber volume	0,2 m ³ -2,0 m ³	DIN EN ISO 16000-9
	Temperature	15°C - 100°C	DIN ISO 12219-4
	Relative air humidity	5%- 70% r.H.	VDA 276
	Air exchange	0 - 1,8 m ³ /h	
	HC-concentration (FID)	0,05 - 1000 ml/m ³	

VDA 276-1 Determination of organic emission of interior components in S
2005-12 motor vehicles in a 1m³ emission chamber

VDA 276-2 Determination of organic emission of interior components in S
2005-12 motor vehicles in a 1m³ emission chamber -
Part 2: Determination of the release of formaldehyde,
ammonia and phenols by the method of equilibrium
concentration

VDA 276-3 Determination of organic emission of interior components in S
2005-12 motor vehicles in a 1m³ emission chamber -
Part 3: Determination of the total concentration of
hydrocarbon compounds by flame ionization detector (FID)

Valid from: 16.06.2022

Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

DIN EN ISO 16000-9 2008-04	Indoor air - Part 9: Determination of the emission of volatile organic compounds from building products and furnishing - Emission test chamber method (Sampling: S)	S
DIN ISO 12219-4 2013-12	Interior air of road vehicles - Part 4: Method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials - Small chamber method	S
BMW GS 97014-3 2014-04	Emissions measurement with air exchange in a testing chamber - Determination of volatile, organic emissions from components, semi-finished products and materials	S
BMW GS 97014-2 2011-04	Emissions measurement in SHED chambers - Determination of volatile, organic emissions from components, semi-finished products and materials that do not carry fuel	S
VW PV 3942 2016-08	Emission Behavior of Parts, Components, and Semi-Finished Products for the Vehicle Interior	S
Volvo VCS 1027,2769 2007-10	Determination of volatile organic substances from interior components/systems using a 1m ³ emission chamber - Organic materials	S

1.2.2 Examination of emission behavior of components or component constituents of motor vehicle interior by storage in sample bags or micro-scale chambers and sampling indoor air *

DIN ISO 12219-2 2012-11	Interior air of road vehicles - Part 2: Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials - Bag method	M
DIN ISO 12219-3 2013-12	Interior of road vehicles - Part 3: Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials - Micro-scale chamber method	M
Toyota TSM 0508G 2009-06	Volatile Component Measurement Method Using Sampling Bag	M
Suzuki SES N 2403 2012-07	Standard for Control of Volatile Organic Compounds Emission	M

Annex to the accreditation certificate D-PL-14052-01-00

Hyundai/KIA MS 300-55 2016	Test Method of Volatile Organic Compounds from Vehicle Interior Parts	M
-------------------------------	--	---

1.2.3 Determination of formaldehyde and other carbonyl compounds in the indoor air from test chambers using HPLC with standard-detectors (UV-, UV-fluorescence-detection) *

DIN ISO 16000-3 2013-01	Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds; Sampling with a pump (Modification: <i>Air from bags, micro chambers, test chambers and vehicle interiors</i>) S, M: Sampling with a pump; M: Analytics	M S
----------------------------	--	--------

VDI 3862 Blatt 3 2000-12	Gaseous emission measurement Measurement of aliphatic and aromatic aldehydes and ketones by DNPH method Cartridges method (Modification: <i>Air from bags, micro chambers, test chambers and vehicle interiors</i>) S, M: Sampling with a pump; M: Analytics	M S
-----------------------------	---	--------

1.2.4 Determination of volatile organics and groups of substances in the inside air out of test chambers using gas chromatography with mass selective detection (GC-MS) and chemiluminescence-detection (GC-TEA) *

DIN ISO 16000-6 2012-11	Indoor air - Part 6: Determination of volatile organic compounds VOC in indoor and test chamber air by active sampling on TENAX TA® sorbent, thermal desorption and gas chromatography using MS/FID (Modification: <i>Air from bags, micro chambers, test chambers and vehicle interiors</i>) (Modification: <i>measurement by GC/MS</i>)	M S
----------------------------	--	--------

VDI 4301 Blatt 6 2012-09	Measurement of indoor air pollution - Measurement of phthalates with GC/MS (Modification: <i>Air from bags, micro chambers, test chambers and vehicle interiors</i>) S, M: Sampling with a pump; M: Analytics	M S
-----------------------------	---	--------

BGI 505.23, Teil 4 1992-09	Methods for determination of N-nitrosamine - sampling with a pump and sorption on a solid phase, Capillary- Gaschromatography after elution (Modification: <i>Air from bags, micro chambers, test chambers and vehicle interiors</i>) S, M: Sampling with a pump; M: Analytics	M S
-------------------------------	---	--------

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

TD_G_CB_SOP_5.4_111_G_0 2009-09	Determination of selected phthalates on room air carriers (Florisil) by means of GC-MS	M
------------------------------------	--	---

1.2.5 Determination of Odor characteristics of indoor air of test chambers *

DIN ISO 12219-7 2017-08	Interior air of road vehicles - Part 7: Odour determination in interior air of road vehicles and test chamber air of trim components by olfactory measurements	S
----------------------------	--	---

BMW GS 97014-4 2012-11	Emission measurement with air exchange in a testing chamber - Determination of the olfactory behavior	S
---------------------------	---	---

1.2.6 Determination of volatile compounds and groups of substances in the indoor air of test chambers using photometry *

VDI 3484 Blatt 2 2001-11	Gaseous ambient air measurements - Indoor-air pollution measurements - Measurement of the formaldehyde concentration with the acetylacetone method (Modification: <i>Air from bags, micro chambers, test chambers and vehicle interiors</i>) M: Analytics	M
-----------------------------	--	---

VDA 276 2005-12	Determination of organic emission of interior components in motor vehicles in a 1m ³ emission chamber Part 2: Determination of the release of formaldehyde, ammonia and phenols by the method of equilibrium concentration - components for automotive interior M: Analytics	M
--------------------	---	---

2 Quantitative analysis of selective parameters and analytes in polymeric material, leather and textiles, predominantly for the use in vehicle interior or in synthetic turf systems.

2.1 Gravimetric determination of extractable properties from mineral filler, parts of glass and ashes as well as volatile substances and water content *

VDA 675-125 1992-12	Elastomer components in motor vehicles - test method for identification - extractable properties	M
------------------------	--	---

DIN EN ISO 6427 2014-08	Plastics - Determination of content of extractable properties by organic solvent (general methods)	M
----------------------------	--	---

ISO 6209 2009-07	Rubber compounding ingredients - Carbon black - Determination of solvent-extractable material	M
---------------------	---	---

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

DIN EN ISO 4048 2018-10	Leather - Chemical tests - Determination of matter soluble in dichloromethane and free fatty acid content	M
DIN 54278-1 1995-10	Testing of textiles - Coatings and attendant materials - Part 1: Determination of materials soluble in organic solvents	M
DIN EN 322 1993-08	Wood-based panels; determination of moisture content	M
Daimler DBL 5555-B 2014-04	Plastics - Determination of water content by drying for 72 hours in a heating oven at 105°C	M
Daimler DBL 5555-C 2014-04	Plastics - Determination of water content by drying with an infrared dryer at 110±5°C	M
DIN EN ISO 3451-1 2008-11	Plastics - Determination of ash - Part 1: General methods	M
ISO 3451-2 1998-12	Plastics - Determination of ash - Part 2: Poly (alkylene-terephthalate) materials	M
DIN EN ISO 3451-3 1991-04	Plastics - determination of ash - unplasticized acetyl cellulose	M
DIN EN ISO 3451-4 2001-08	Plastics - determination of ash - Part 4: polyamides	M
DIN EN ISO 3251 2008-06	Paints, varnishes and plastics - Determination of non-volatile-matter content	M
DIN EN ISO 4684 2006-02	Leather - Chemical tests - Determination of volatile matter	M
DIN EN ISO 1172 1998-12	Textile-glass-reinforced plastics - Prepregs, moulding compounds and laminates - Determination of the textile-glass and mineral-filler content; calcination methods	M
VDA 675-130 1992-12	Elastomer components in motor vehicles - test method for identification - ash content without chemical treatment	M

Annex to the accreditation certificate D-PL-14052-01-00

2.2 Determination of organic compounds and groups of substances using gas chromatography with standard-detectors (FID, ECD) and mass selective detection (MSD)

DIN EN 13130-4 2004-08	Determination of 1,3-butadiene in plastics	M
---------------------------	--	---

2.4 Determination of Formaldehyde using photometry *

DIN EN ISO 17226-2 2009-09	Leather - Chemical determination of formaldehyde content - Part 2: Method using colorimetric analysis	M
-------------------------------	---	---

DIN EN ISO 14184-1 2011-12	Textiles - Determination of formaldehyde - Part 1: Free and hydrolysed formaldehyde (water extraction method)	M
-------------------------------	---	---

2.5 Determination of Formaldehyde and other carbonyl compounds by HPLC with standard-detectors (UV)

DIN EN ISO 17226-1 2008-08	Leather - Chemical determination of formaldehyde content - Part 1: Method using high performance liquid chromatography	M
-------------------------------	--	---

2.6 Determination of selected UV-stabilizers using HPLC in polymeric material with standard-detectors (HPLC-UV-detection)

ASTM D6042-09 2016	Standard Test Method for Determination of Phenolic Antioxidants and Erucamide Slip Additives in Polypropylene Homopolymer Formulations Using Liquid Chromatography (LC) (Modification: <i>extraction and treatment of extracts</i>)	M
-----------------------	---	---

3 Determination of flammability of materials, predominantly in use for motor vehicle interior - Determination of the horizontal burning rate *

ISO 3795 1989-10	Road vehicles, and tractors and machinery for agriculture and forestry - Determination of burning behavior of interior materials	M
---------------------	--	---

DIN 75200 1980-09	Determination of burning behaviour of interior materials in motor vehicles	M
----------------------	--	---

Annex to the accreditation certificate D-PL-14052-01-00

FMVSS 302 2017-10	Flammability of Interior Materials	M
GB 8410-2006 2006-01	National Standard of the People's Republic of China - Flammability of Interior Materials	M

4 Mechanical characteristics and physical properties of polymeric material and components, leather and textiles, predominantly for the use in vehicle interior as well as sports grounds

4.1 Examination of mechanical characteristics of plastics and textiles *

Type of test	Measurand/ test parameter	Load range	Characteristic test processes
Tensile, Compression, Deflection	Tensile force	2 N - 10 kN 2 N - 10 kN	DIN EN ISO 527
	Compressive force	10 N - 10 kN	DIN EN ISO 3386
	Bending force	10 N - 10 kN 10 N - 10 kN	DIN EN ISO 178
Length	Length	Dial gauge (digital): 0 mm – 12,5 mm 1 mm – 10 mm 10 mm – 115 mm 150 mm – 500 mm	DIN 53435 DIN EN ISO 527
Change of length	Distance	Traverse distance 5 mm – 600 mm	DIN EN ISO 13934-1
	Elongation Distance	0,1 mm – 500 mm	DIN EN ISO 527
	Bending distance	0,1 mm – 500 mm	DIN EN ISO 178
Impact loading	Impact energy	0,5 J – 25 J	DIN EN ISO 179
		0,5 J – 25 J	DIN EN ISO 180
		0,2 J – 4 J	DIN 53435
Hardness	Ball indentation hardness Test force	23,8 N/mm ² - 467 N/mm ² 9,8 N – 961 N	DIN EN ISO 2039-1
Hardness	IRHD Shore A, D, L	0 - 100	DIN ISO 48 DIN EN ISO 868 AK LV 110

Annex to the accreditation certificate D-PL-14052-01-00

4.1.1 Flexural tests of plastics *

DIN EN ISO 178 2013-09	Plastics - Determination of flexural properties	M
DIN 53435 2018-09	Testing of plastics; bending test and impact test on dynstat test pieces (here: <i>Application of bending test</i>)	M

4.1.2 Tensile tests of plastic materials and textiles *

DIN EN ISO 527-2 2012-06	Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics	M
DIN EN ISO 527-4 1997-07	Plastics - Determination of tensile properties - Part 4: Test conditions for isotropic and anisotropic fibre-reinforced plastic composites	M
DIN EN ISO 527-5 2010-01	Plastics - Determination of tensile properties - Part 5: Test conditions for unidirectional fibre-reinforced plastic composites	M
DIN 53354 1981-02	Testing Synthetic Leather - tensile test	M
DIN 53356 1982-08	Testing Synthetic Leather and similar Fabrics - Tear Test	M
DIN 53357-A 1982-10	Testing Plastic Membranes and Plastic Foils - Separation Test on Layers (procedure A)	M
DIN 18035-7 2014-10	Sports grounds - Part 7: Synthetic turf areas 7.9: Determination of tensile Strength, transverse	M
DIN EN ISO 13934-1 2013-08	Textiles - Tensile properties of fabrics - Part 1: Determination of maximum force and elongation at maximum force using the strip method	M
DIN EN ISO 13935-1 2014-07	Textiles - Seam tensile properties of fabrics and made-up textile articles - Part 1: Determination of maximum force to seam rupture using the strip method	M
VW PV 3946 2001-02	Upholstery material; Determination of the strength, resistance to tearing and shifting of seams	M

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

DIN 53859-5-A 1992-12	Testing of textiles; tear growth test on textile fabrics; trapezoid test	M
DIN EN ISO 13937-2 2000-06	Textiles - Tear properties of fabrics - Part 2: Determination of tear force of trouser-shaped test specimens (Single tear method)	M
DIN EN ISO 13937-3 2000-06	Textiles - Tear properties of fabrics - Part 3: Determination of tear force of wing-shaped test specimens (Single tear method)	M
DIN EN ISO 3377-1 2012-03	Leather - Physical and mechanical tests - Determination of tear load - Part 1: Single edge tear	M
DIN EN ISO 8067 2009-06	Flexible cellular polymeric materials - Determination of tear strength	M
DIN ISO 34-1 2016-09	Rubber, vulcanized or thermoplastic - Determination of tear strength - Part 1: Trouser, angle and crescent test pieces	M

4.1.3 Compression test on foamed plastics *

DIN EN ISO 3386-1 2015-10	Polymeric materials, cellular flexible - Determination of stress-strain characteristics in compression - Part 1: Low-density materials	M
DIN EN ISO 3386-2 2010-09	Flexible cellular polymeric materials - Determination of stress-strain characteristics in compression - Part 2: High-density materials	M

4.1.4 Determination of strength by impact and the hardness of plastics *

DIN EN ISO 179-1 2010-11	Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test	M
DIN EN ISO 180 2013-08	Plastics - Determination of Izod impact strength	M
DIN 53435 2018-09	Testing of plastics; bending test and impact test on dynstat test pieces (here: <i>Application of impact test</i>)	M
DIN EN ISO 2039-1 2003-06	Plastics - Determination of hardness - Part 1: Ball indentation method	M

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

DIN EN ISO 75-2 2013-08	Plastics - Determination of temperature of deflection under load - Part1: General test method	M
DIN EN ISO 306 2014-03	Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST)	M
DIN EN ISO 868 2003-10	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)	M
DIN EN ISO 21509 2015-10	Plastics and ebonite - Verification of Shore durometers	M
DIN ISO 7619-1 2012-02	Rubber, vulcanized or thermoplastic - Determination of indentation hardness - Part 1: Durometer method (Shore hardness)	M
ASTM D2240 2015-08	Standard Test Method for Rubber Property - Durometer Hardness	M
Renault D45 1291 2012-09	Rubber and Plastics - Shore Hardness A or D	
Toyota TSM 0501G §9.9.2 2010-08	Standard test method for plastic molding materials - 9.9.2 Shore Hardness Measurement	M
DIN ISO 48 2016-09	Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD)	M
AK LV 110 2002-01	PU foam of steering wheel covering Chapter 10, Hardness test	M
PV 3931 1996-05	Hardness Testing PUR Integral foam steering wheel rim	M

4.1.5 Determination of resistance to stress cracking *

DIN EN ISO 22088-3 2006-11	Plastics - Determination of resistance to environmental stress cracking - Part 3: Bent strip method	M
DBL 5416 § 8.2 2017-07	Parts manufactured from Thermoplastics for Paneling, Housings and Functional Parts for External Applications - 8.2 Testing of resistance to environmental stress cracking	M

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

DBL 5404 § 7.13 2016-05	Parts Manufactured from Thermoplastics for the Direct and Indirect Areas of the Passenger Compartment and for Passenger Compartment Heating and Ventilation, Trim and Housings - 7.13 Resistance to environmental stress cracking DIN EN ISO 22088-3 on unpainted plastic parts of the vehicle interior	M
DBL 9202 § 9.19 2013-01	Supply Specification Decorative Parts in Vehicle Interiors - 9.19 Environmental stress cracking on part	M
BMW GS 93011-8 2002-12	Determination of Resistance to Stress Cracking of Plastics due to Contact with Elastomers	M
Ford FLTM BO 127-03 2017-07	Stress Cracking For Plastics	M
Ford ESK-M2D419-A § 3.4.9 2004-10	Cellular Elastomer, Gasket - 3.4.9 Resistance of Plastics to Stress Cracking by Gasket Material	M
VW PV 3983 2014-04	Plastics and Thermoplastics Elastomers - Testing Resistance to Agents in Conjunction with Mechanical Stresses	M

4.2 Determination of selective physical properties of plastics, leather and textiles *

Type of test	Measurand/ test parameter	Load range	Characteristic test processes
Length	Length	Micrometer gauge 0,1 mm – 25 mm	DIN EN ISO 1923
		Slide gauge 0,1 mm – 150 mm 0,1 mm – 500 mm	DIN EN ISO 2420
		Metal rule 0,1 mm – 300 mm 0,1 mm – 1000 mm	DIN EN 12127
Determination of length per weight/ area	Thickness Pressure	Thickness gauge 0,001 mm – 25 mm 0,2 kPa – 72 kPa	ISO 1766
Determination of mass	Mass	0,1 mg – 210 g 200 g – 10 kg	DIN EN ISO1183-1

Annex to the accreditation certificate D-PL-14052-01-00

4.2.1 Determination of density, raw density, mass by area and thickness of plastics, leather and textiles by weighing and length measurement *

DIN EN ISO 1183-1 2013-04	Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method (only procedure A und B)	M
DIN EN ISO 2811-1 2016-08	Paints and varnishes - Determination of density - Part 1: Pycnometer method	M
DIN EN ISO 845 2009-10	Cellular plastics and rubbers - Determination of apparent density	M
DIN EN ISO 1923 1995-06	Cellular plastics and rubbers - Determination of linear dimensions	M
DIN EN ISO 2420 2003-10	Leather - Physical and mechanical tests - Determination of apparent density	M
DIN EN 12127 2017-05	Textiles - Fabrics - Determination of mass per unit area using small samples	M
DIN EN ISO 5084 1996-10	Textiles - Determination of thickness of textiles and textile products	M
ISO 1763 1986-11	Carpets; Determination of number of tufts and/or loops per unit length and per unit area	M
ISO 1766 1999-10	Textile floor coverings - Determination of thickness of pile above the substrate	M
ISO 2549 1972-08	Hand-knotted carpets; Determination of tuft leg length above the woven ground including Corrigendum von 12-1990	M
ISO 8543 1998-05	Textile floor coverings - Methods for determination of mass	M
DIN EN 430 1994-11	Elastic Floor Coverings - Determination of mass by area	M

Annex to the accreditation certificate D-PL-14052-01-00

5 Durability-, authenticity- and environmental and natural weathering tests

5.1 Durability and fastness against ageing caused by environmental influences of laquer- or other material surfaces, textiles, components and component constituents, predominantly for the use in motor vehicle interior and exterior *

Type of test	Measurand/ test parameter	Load range	Characteristic test processes
Colour and Colour change measurement	Colorimetric quantity (CIE 1976) Lightness L* Coordinates a*/b* Distance $\Delta L^*/\Delta a^*/\Delta b^*$ Colour difference: ΔE^*	Geometry of the measurement 0°/45° d8° Illuminant D65 10° Normal observer Measuring field diameter 30/22/20/16/9/8/6,6/4 mm	VW 50190 VDA 280-1 DIN EN ISO 105-A05
Gloss measurement	Gloss value	Geometry of the measurement 20°/60°/85° 0 GU – 100 GU 100 GU – 500 GU	VW 50190 DIN EN ISO 2813
Visual evaluation of colour change	Grey scale	1 note – 5 note	DIN EN 20105-A02 DIN EN 20105-A03

DIN EN-20105-A02 1994-10	Textiles - Tests for colour fastness - Part A02: Grey scale for assessing change in colour (ISO 105-A02:1993)	M H
DIN EN 20105-A03 1994-10	Textiles - Tests for colour fastness - Part A03: Grey scale for assessing staining (ISO 105-A03:1993)	M
DIN EN ISO 105-A04 1999-10	Textiles - Tests for colour fastness - Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics	M
DIN EN ISO 105-A05 1997-07	Textiles - Tests for colour fastness - Part A05: Instrumental assessment of change in colour for determination of grey scale rating	M H
DIN 6167 1980-01	Description of yellowness of near-white or near-colourless materials	M H
SAE J1767 2014-01	Instrumental Color Difference Measurements for Colorfastness of Automotive Interior Trim Materials	M H

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

VDA 280-1 2001-04	Colorimetry for motor vehicles - Colour measuring of plastic surfaces of interior materials for motor vehicles	M H
VDA 280-3 2001-04	Colorimetry for motor vehicles - Colour measuring of motor vehicle varnishing (solid-paints)	M H
VW 50190 2011-01	Interior Trim Components Metrological Evaluation of Color and Gloss Level Visual Evaluation of Chrome Surfaces	M H
ASTM D523 2014	Standard Test Method for Specular Gloss	M H
DIN 67530 1982-01	Reflectometer as a means for gloss assessment of plane surfaces of paint coatings and plastics	M H
DIN EN ISO 2813 2015-02	Paints and varnishes - Determination of gloss value at 20°, 60° and 85°	M H
DIN EN ISO 4628-1 2016-07	Paints and varnishes - Valuation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 1: General introduction and designation system	M H
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	M H
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	M H
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	M H
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	M H

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

DIN EN ISO 877-1 2011-03	Plastics - Methods of exposure to solar radiation - Part 1: General Guidance	S
DIN EN ISO 877-2 2011-03	Plastics - Methods of exposure to solar radiation - Part 2: Direct weathering and exposure behind window glass	S
DBL 5555 § 23.1 2014-04	Finished Parts and Semi-Finished Products Made of Organic Polymer Materials: General Conditions and Test Methods § 23.1 Natural weathering	S
MBN 10494-6 2016-03	Paint Test Methods - Part 6: Climatic Tests; § 5.8.2 Weathering in central European climate	S

5.2 Fastness and durability of laquer- or other material surfaces and textiles against mechanic exposures as rubbing and scratching as well as with contact with test media or with pollution and cleaning *

Type of test	Measurand/ test parameter	Load range	Characteristic test processes
Colour fastness, durability and scratch resistance against abrasion(linearly alternate motion)	Number of cycles Friction path Frequency Force Test stamp	0,5 – 10 ^x 30 – 104 mm 0 – 90 cycles/min 1 N – 25 N Rubbing device with diameter 8 mm – 20 mm Chisel with width 8 mm – 20 mm Radius 0,16 mm – 45 mm	DIN EN ISO 105-X12 DBL 5306 § 3.2
Colour fastness and durability against rubbing and fluff creation with Martindale method	Measuring surface and Abrasion figure Testing force	Lissajous (abrasion) 60,5 mm Lissajous (Pilling) 24,0 mm Load Abrasion 9 / 12 KPa Pilling 155 /260 / 815 g	DIN EN ISO 12947-1 DIN EN ISO 12945-2
Type of test	Measurand/ test parameter	Load range	Characteristic test processes
Durability against abrasion with fingers and hands (Xb);	Stroke rate Friction path and	1 – 10 ^x 4 mm – 40 mm at	DIN EN 60068-2-70 BMW GS 97034-1

Annex to the accreditation certificate D-PL-14052-01-00

Dry or with test liquids	frequency Testing speed Press-on force Hardness of test stamp	2,0 – 0,6 cycles/s 60 mm/s 1 N – 20 N Shore A 47 (Typ 20 mm; 10 mm)	
Durability against scratching using instrumental cross cut test	Testing distance Cut distance Test speed Test load	40 mm 0,5 mm – 40 mm 17 - 40 mm/s 1 N – 40 N	VW PV 3952 BMW GS 97034-9

DIN EN ISO 105-X12 2016-11	Textiles - Tests for colour fastness - Part X12: Colour fastness to rubbing	M
Daimler DBL 5306 § 3.2 2008-12	General technical delivery conditions and test methods for interior equipment materials and similar products; § 3.2: Scratch exposure of surface using a chisel	M
DIN EN ISO 12945-2 2000-11	Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 2: Modified Martindale method	M
DIN EN ISO 12947-1 2007-04	Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 1: Martindale abrasion testing apparatus	M
DIN EN ISO 12947-2 2017-03	Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 2: Determination of specimen breakdown	M
DIN EN ISO 12947-3 2007-04	Textiles - Determination of abrasion resistance of fabrics by the Martindale method - Part 3: Determination of mass loss	M
DIN EN ISO 12947-4 2007-04	Textiles - Determination of abrasion resistance of fabrics by the Martindale method - Part 4: Assessment of appearance change	M
BMW PR 360 2017-02	Abrasion using TABER	M
DIN EN ISO 17076-1 2012-06	Leather - Determination of abrasion resistance - Part 1: Taber method	M
FLTM BN 108-02 2017-07	Resistance to Abrasion - Taber Abrasion	M
GMW 2308 2017-09	Rotary Abrasion Test, Taber Type	M

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

SAE J365 2012-05	Method of testing resistance to scuffing of trim materials	M
DIN EN 60068-2-70 1996-07	Environmental testing - Part 2-70: Tests - Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands	M
BMW AA-0471 2017-03	Abrasion Resistance using the Abrex test Equipment	M
BMW GS 97034-1 2015-09	Surface test of motor vehicle interior materials Manual abrasion test	M
BMW GS 97034-2 2015-09	Surface test of motor vehicle materials Finger nail test	M
BMW GS 97034-3 2015-09	Surface test of motor vehicle interior materials Shoe sole test	M
BMW GS 97034-4-A 2015-09	Surface test of motor vehicle interior materials Color abrasion behavior; Abrex	M
BMW GS 97034-4-B 2015-09	Surface test of motor vehicle interior materials Color abrasion behavior; Crockmeter	M
BMW GS 97034-5-A 2015-09	Surface test of motor vehicle interior materials Resistance to cleaning agents; Abrex	M
BMW GS 97034-5-B 2015-09	Surface test of motor vehicle interior materials Resistance to cleaning agents; Crockmeter	M
FLTM BN 155-01 2008-10	Ford; Resistance to Simulated Finger Tip Abrasion	M
BMW GS 97034-6 2015-09	Surface test of motor vehicle interior materials Soiling behavior and cleaning ability	M
BMW GS 97034-8 2015-09	Surface test of motor vehicle interior materials Determination of the scratch inclination	M
BMW GS 97034-9 2015-09	Surface test of motor vehicle interior materials Scratch test	M

Annex to the accreditation certificate D-PL-14052-01-00

DIN EN ISO 2409 2013-06	Paints and varnishes - Cross-cut test	M H
DIN EN ISO 2812-2 2017-08	Paints and varnishes - Determination of resistance to liquids - Part 2: Water immersion method	M
DIN EN ISO 2812-4 2018-03	Paints and varnishes - Determination of resistance to liquids - Part 4: Spotting methods	M
DIN ISO 1817 2016-11	Rubber, vulcanized or thermoplastic - Determination of the effect of liquids	M
DIN EN ISO 175 2011-03	Plastics - Methods of test for the determination of the effects of immersion in liquid chemicals	M
DIN 53863-2 1979-02	Testing of textiles; abrasion test methods for textile fabrics, rotary abrasion test	M
GMW 3283 2016-08	Schopper Abrasion Wear Test	M
VW PV 3353 2004-01	Vehicle Interior Trim Surfaces (Soiling and Cleaning Behavior)	M
VW PV 3907 1999-09	Textiles - Brush Abrasion Test	M
VW PV 3908 2014-05	Textiles, Carpets Wear Resistance	M
FLTM BI 106-01 2017-05	Ford; Coating Adhesion Test	M
GMW 14698-A 2016-04	GM; Scratch Resistance of Organic Coatings and Selfadhesive foils, Method A (Hardness Test Rod Type 318 from Erichsen GmbH & Co. KG)	M
GMW 14829 2012-10	GM; Tape Adhesion Test for Paint Finishes	M
VW PV 3952 2015-11	Plastic Interior Components Testing of Scratch Resistance	M
VW TL 226 § 3.7.2 2018-04	Paintworks on Materials Used in the Vehicle Interior Trim - Cross-cut-test (St. Andrew's cross)	M

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

GMW 3405 2014-04	Seam Fatigue for Automobile Textiles	M
FLTM BN 106-02 2017-11	Seam Fatigue Testing	M
Daimler DBL 5416 2017-08	Supply Specification - Parts Manufactured from Thermoplastics for Paneling, Housings and Functional Parts for External Applications A.3.3 (Layer thickness at all surface locations) A.3.5.2 (St Andrews cross with scratch test) A.3.5.3 (St Andrews cross with adhesive tape application and removal) A.3.5.1 (Scratch test)	H
Daimler DBL 7392 2009-01	Supply specification - Coating/varnishing for parts with moderate corrosion stress; § 5.2: Scratching with a knife	H
Daimler DBL 7399 1997-10	Supply specification - Enamels, paints and similar coating materials and associated coatings; § 5.1: Scratching with knife	H
BMW AA- 0180 2017-05	Cross hatch testing	H
BMW AA-P 177 2008-11 (outworn)	Cross hatch testing	H
BMW PA-P 028 2002-12 (outworn)	Cross hatch testing	H
VW TL 226 2018-04	Paint Coating on Materials used in the Vehicle Interior Trim - Requirements § 3.7.1 (Cross hatch testing) § 3.7.2 (St. Andrew's cross)	H
Porsche PTL 5522 1994-06	Painting of Non-Metallic Materials for interiors § 3.3.3 Scratch test/ Scrap test	H
Jaguar TPJLR.52.061 2009-12	Jaguar Cars & Landrover: Paint Adhesion Test Method	H
GM/ Opel GME 60402 2002-6	Determining the scratch resistance of organic coating (Erichsen hardness tester, model 318)	H
GM/ Opel GMW 14698- A 2016-04	Scratch resistance of organic coatings and self-adhesive foils; Method A: Erichsen Hardness Test Rod type 318	H

Valid from: 16.06.2022
Date of issue: 16.06.2022

5.3 Colour fastness and durability of laquer- or other material surfaces against artificial light and weathering with xenon lamps *

Type of test	Measurand/ test parameter	Load range	Characteristic test processes
Colour fastness tests and colour fastness to artificial light	Irradiance	1,1 – 3,6 W/m ² (420 nm) 45 – 162 W/m ² (300 – 400 nm) 70 – 90 W/m ² (300 – 400 nm) 0 + 0,55 W/m ² (340 nm)	DIN EN ISO 105-B06 (3) DIN EN ISO 105-B06 (1) DIN EN ISO 105-B06 (5)
Colour fastness tests and colour fastness to artificial light	Temperature Black-standard (BST) Black-panel (BPT)	90 / 100 / 115°C (BST) 38 + 89°C (BPT)	DIN EN ISO 105-B06 (3)(1) DIN EN ISO 105-B06 (5)
	Test chamber temperature	48 / 65 °C 38 + 63 °C	DIN EN ISO 105-B06 (1)(3) DIN EN ISO 105-B06 (5)
	Humidity, rel.	0 - 30 % r.H. 95 + 50 % r.H.	DIN EN ISO 105-B06 (1)(3) DIN EN ISO 105-B06 (5)
Colour fastness and Durability against weathering (weather Fastness)	Irradiance	60 W/m ² (300-400nm) 75 W/m ² (300-400nm)	VW PV3930/PPV4014-B VW PV3929/PPV4014-A
	Temperature Black-standard (BST)	65°C 90°C	VW PV3930/PPV4014-B VW PV3929/PPV4014-A
	Test chamber temperature	38°C 50°C	VW PV3930/PPV4014-B VW PV3929/PPV4014-A
	Humidity, rel.	70% r.H. (dry phase) 20% r.H.	VW PV3930/PPV4014-B VW PV3929/PPV4014-A

DIN EN ISO 105-B06 2004-07	Textiles - Tests for colour fastness - Part B06: Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test	M H
VDA 75202 2001-08	Color fastness and aging behaviour against light by high temperature	M H
DIN EN ISO 4892-2: 2013-06	Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps	H
GMW14162 2016-11	GM Test Procedure - Colorfastness to Artificial Weathering	M
PPV 4014 / VW 96378 2006-08	Exterior - Weathering of nonmetallic materials Testing in dry, hot climate/ in humid, warm climate	H

Annex to the accreditation certificate D-PL-14052-01-00

VW PV 3929 2018-03	Weathering in dry, hot climate	H
VW PV 3930 2017-11	Weathering in humid, warm climate	H
BMW PR 231 § 2.2.13.4 (Kalahari-Mode) 2017-11	Simulated Weathering: dry-hot climate / Kalahari-mode	H
BMW PR 231 § 2.2.13.5 (Florida-Mode) 2017-11	Simulated Weathering: humidity-warm climate / Florida-mode	H
DBL 5578, Tab. 2, 4.12.4 / LV 28 (Florida Mode and Kalahari-Mode) 2015-10	Supply Specification - Elastomer parts with anti-friction coating; Table 2, 4.12.4: Artificial weathering - Exterior application - Kalahari mode and Florida mode	H
Volvo STD 1026,8242 2009-04	Organic Materials - Colour fastness to artificial light at 100 °C	M
SAE J2412 2015-08	Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Xenon-Arc Apparatus	M
VW PV 1303 2015-11	Non-Metallic Materials Exposure Test of Passenger Compartment Components	H

5.4 Environmental tests with temperature, humidity, sun simulation (halogenide-emitter), mechanical endurance and in combination (qualification tests) on pre- and end-products as well as automobile industry components *

Type of test	Measurand/ test parameter	Range of performance	Characteristic test processes
Environmental simulation using climate tests	Test chamber volume	Climate cycle and temperature 0,2 - 46 m ³	DIN EN 60068-2-1 DIN EN 60068-2-2 DIN EN 60068-2-14 DIN EN 60068-2-30
	Temperature	Climate (-40°C) to +10 °C to + 120 °C Cold/ Warmth -70 °C to +300 °C	VW PV 1200 VW PV 2005 BMW PR 308.2 BMW PR 303.5
	Humidity	10 to 95 % r.H.	

Annex to the accreditation certificate D-PL-14052-01-00

Type of test	Measurand/ test parameter	Range of performance	Characteristic test processes
Length measurement including optical component measurement	Length	Micrometer gauge 0 mm – 25 mm Slide gauge 0 mm – 150 mm 0 mm – 500 mm Metal rule 0 mm – 300 mm 0 mm – 1000 mm Feeler gauge 0,05 mm – 2 mm	
		Steel rule 0 - 50 m	
		Optical component measurement 0,2m - 5 m	TD_G_CB_FR_5.4_176_G_0
Force measurement	Assembling-, Disassembling - Force	0 - 100 N	
Sun simulation with metal-halogenide lamps	Irradiance	550 - 1100 W/m ² (280 nm to 3.000 nm)	DIN 75220

DIN EN ISO 2440 2015-02	Flexible and rigid cellular polymeric materials - Accelerated ageing tests	M
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) (Modification: <i>Determination only constant humidity</i>)	H
DIN EN 60068-2-1 2008-01	Environmental testing - Part 2: Tests - Test Group A: Cold	M H
DIN EN 60068-2-2 2008-05	Environmental testing - Part 2: Tests - Test Group B: Dry heat	M H
DIN EN 60068-2-14 2010-04	Environmental testing - Part 2: Tests; test N: Change of temperature	M H
DIN EN 60068-2-30 2006-06	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	M H

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

DIN 75220 1992-11	Ageing of automotive components in solar simulation units	H
VDA 237-101 1996-01	Test procedures for foils and artificial leather; Appendix 3: Ball drop test	H
BMW PR 306.5 2014-04	Solar Simulation for Trim Parts	H
BMW PR 303.5 2010-01	Alternating climate test for trim parts	M, H
BMW PR 308.2 2006-04	Climatic test bonded joints and composite material on trim parts	M, H
TPJLR.52.353 2011-02	Accelerated Environmental Ageing	M
Porsche PPV 4015 2006-04	Exterior - Testing of Add-on Parts; Climatic Test	M, H
VW PV 1200 2004-10	Testing of Resistance to Environmental Cycle Test (+80/-40) °C	M, H
VW PV 2005-A 2000-09	Testing of Resistance to Environmental Cycle Test – Variant A	M, H
GMW 14124 Test Cycle T 2017-08	Automotive Environmental Cycles	M
Daimler DBL 5471 2018-08	Supply specification - trim panels and molded padded parts for vehicle interiors (compound parts) A 4.6 (Cold resistance)	H
VW PV 3905 2015-04	Organic materials - Ball drop test	H
Jaguar TPJLR.52.709 2009-10	Jaguar Cars & Landrover; Resistance to Low Temperature Impact Method A (rubber ball) and Method B (steel ball)	H
Ford FLTM BO 151-01 2006-06	Resistance to low temperature impact (Ball drop test) Method A (rubber ball) Method B (steel ball)	H

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

TD_G_CB_FR_5.4_176_G_0 Test Equipment Instruction for Visual Component Measuring H
2014-11

5.4.1 Measurement of coating thickness

DIN EN ISO 2360 2017-12	Non-conductive coatings on non-magnetic electrically conductive basis materials - Measurement of coating thickness - Amplitude-sensitive eddy current method	H
DIN EN ISO 1463 2004-08	Metallic and oxide coatings - Measurement of coating thickness - Microscopical method	S
DIN EN ISO 2808 2007-05	Paints and varnishes - Determination of film thickness (Method 6A - Cross Section)	S
DIN EN ISO 17186 2012-03	Leather - Physical and mechanical tests - Determination of surface coating thickness	S
ASTM B487 1985	Standard Test Method for Measurement of Metal and Oxide Coating - Thickness by Microscopical Examination of Cross Section	S
MBN 10483-1 2016-05	Coating Thickness for Car Body Paintwork, Measuring Methods and Their Evaluation (Chapter 5.4 Cross-sectioning method)	S

5.4.2 Infrared test

GM/ Opel GMW 15432 2012-05	Irradiation Testing	H
-------------------------------	---------------------	---

5.5 Resistance of paint or other surfaces material to mechanical stress like stone impact or steam jet

5.5.1 Stone impact test *

DIN EN ISO 20567-1 2017-07	Paints and varnishes - Determination of stone-chip resistance of coatings - Part 1: Multi-impact testing	H
BMW AA-0079 2014-09	Determination of multi impact stone chip resistance	H

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

Daimler DBL 5416 2017-08	Supply Specification - Parts Manufactured from Thermoplastics for Paneling, Housings and Functional Parts for External Applications A.3.6 (Multi impact stone chip resistance test for topcoated parts) Appendix D	H
VW PV 3.14.7 2010-02	Test of Stone-Chip Resistance	H

5.5.2 steam jet test *

DIN EN ISO 16925 2014-06	Paints and varnishes - Determination of the resistance of coatings to pressure water-jetting	H
Daimler DBL 5416 2017-08	Supply Specification - Parts Manufactured from Thermoplastics for Paneling, Housings and Functional Parts for External Applications A.3.9 (Steam jet test for topcoated and primed parts)	H
BMW AA- 0136 2017-11	Steam jet test- Testing of resistance to pressure water jetting	H
VW PV 1503 2008-05	Paint coating of metallic an non-metallic materials - Pressure washer test	H
GS 97045-2 2010-06	Coating on platstic parts - Paintes plastic parts in exterior, interior and engine compartment	H

5.6 Ageing / environmental simulation tests at metallic and non-metallic materials and component parts as well as its evaluation

5.6.1 Corrosion test *

DIN EN ISO 4628-1 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 1: General introduction and designation system	H
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	H

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

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	H
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	H
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	H
DIN EN ISO 6270-2 2018-04	Paints and varnishes - Determination of resistance to humidity - Part 2: Procedure for exposing test specimens in condensation-water atmospheres	H
DIN EN ISO 9227 2017-07	Corrosion tests in artificial atmospheres - Salt spray tests	H
DIN EN ISO 11997 2018-01	Paints and varnishes - Determination of resistance to cyclic corrosion conditions - Part 1: Wet (salt fog)/dry/humidity cycle B	H
ASTM B 117 2018	"Standard Practice for Operating Salt Spray (Fog) Apparatus" - Saltspray-test	H
Daimler DBL 5416 2017-08	Supply Specification - Parts Manufactured from Thermoplastics for Paneling, Housings and Functional Parts for External Applications A.3.7 (Condensation water constant atmosphere)	H
Daimler DBL 7392 2009-01	Supply specification - Coating/varnishing for parts with moderate corrosion stress §5.8 Condensation water constant atmosphere §5.9 Saltspray-test §5.10 Cyclic corrosion test	H
BMW AA-0213 2015-04	Condensation water constant atmosphere test	H
BMW PA-P 208 2004-05	Condensation water constant atmosphere test	H

Valid from: 16.06.2022
Date of issue: 16.06.2022

Annex to the accreditation certificate D-PL-14052-01-00

BMW AA- 0324 2018-04	Saltspray-test	H
BMW AA-0224 2018-04	Cyclic corrosion test	H
VW TL 226 2018-04	Paint Coating on Materials used in the Vehicle Interior Trim - Requirements § 3.11.1 (Condensation water constant atmosphere) § 3.11.2 (Cyclic corrosion test (only for paint coated metallic raw material))	H
Jaguar TPJLR.52.351 2011-02	Jaguar Cars & Landrover: Resistance to Humidity	H
Daimler DBL 7392 2009-01	Supply specification - Coating/varnishing for parts with moderate corrosion stress; § 5.7 - Evaluation of degree of rusting, edge corrosion	H

Abbreviations used:

AK LV	Arbeitskreis Liefervorschrift (Daimler)
ASTM	American Society for Testing and Materials
BGI	Berufsgenossenschaftliche Informationen - Maßnahmenkatalog zur Berufssicherheit
BIA	Berufsgenossenschaftliches Institut für Arbeitssicherheit
BMW AA	BMW Arbeitsanweisung
BMW GS	BMW Group Standard
BMW PR	BMW Prüfvorschrift
DBL	Daimler Benz Liefervorschrift
DIN	Deutsches Institut für Normung e.V.
EN	Europäische Norm
FIFA	Federation Internationale de Football Association
FLTM	Ford Laboratory Test Method
FMVSS	Federal Motor Vehicle Safety Standard
GMW	General Motors Worldwide
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
Hyundai MS	Hyundai Material Specification
Porsche PPV	Porsche Prüfvorschrift
PV	VW Prüfvorschrift
Renault D	Renault Prüfvorschrift
RAL	Deutsches Institut für Gütesicherung und Kennzeichnung e. V.
SAA	Standard-Arbeitsanweisung der imat-uve gmbh
SOP	Standard Operating Procedure
Suzuki SES N	Suzuki Engineering Standard
Toyota TSM	Toyota Prüfvorschrift
TPJLR	Test Procedure Jaguar and Land Rover
VCS	VOLVO Prüfvorschrift
VDA	Verband der Automobilindustrie e.V.
VDI	Verein Deutscher Ingenieure
VDLUFA	Verband Deutscher Landwirtschaftlicher Untersuchungs- und Forschungsanstalten
VW PV	Volkswagen Prüfvorschrift
VW TL	Volkswagen Technische Lieferbedingungen