Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-EP-17063-01-01 according to DIN EN ISO/IEC 17043:2023

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This annex is a part of the accreditation certificate D-EP-17063-01-00.

Holder of partial accreditation certificate:

Deutsches Referenzbüro für Ringversuche und Referenzmaterialien GmbH
Reinhartser Straße 31, 87437 Kempten

with the location

Deutsches Referenzbüro für Ringversuche und Referenzmaterialien GmbH
Reinhartser Straße 31, 87437 Kempten

The proficiency testing provider meets the requirements of DIN EN ISO/IEC 17043:2023 to carry out the conformity assessment activities listed in this annex. The proficiency testing provider meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17043 are written in the language relevant to the operations of proficiency testing providers and they conform to the principles of DIN EN ISO 9001.

Proficiency testing in the fields:

material testing of plastics and plastic products, textiles and textile products, board and paper, elastomers and rubber, metallic materials;
Emission testing of materials for furnishing rooms and interiors;
physical, physical-chemical, chemical, sensory and microbiological investigations of raw and starting materials and intermediate products

For the cells marked with *, the proficiency testing provider is permitted to include proficiency tests within the specified matrix/product and measured variable/test parameters in the scope of accreditation without having to inform and obtain prior approval from DAkkS beforehand. The proficiency testing provider maintains a current list of proficiency tests within the scope of accreditation.

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
Mechanical testing	Plastics and plastic products	Tensile properties Flexural properties Compressive properties Impact properties Tear resistance Compression set Creep behaviour	Tensile test plastic ISO 527-2 ASTM D638 ISO 527-3 - films - geosynthetics Tensile test composites ISO 527-4/-5 ISO 14129 Tensile test foams ISO 1798 Tensile creep test ISO 899-1 Flexural test plastic ISO 178 ASTM D790 Dynstat Flexural test DIN 53435 Flexural test composites ISO 14125 Shear strength ISO 14130 Compression test composites ISO 14126 Compression test plastic ISO 604 Compression set foams ISO 1856 Charpy-(notched) impact test ISO 179 Dynstat-(notched) impact test DIN 53435 Izod impact test ISO 180 ASTM D256

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
		Impact behavior Dynamic-mechanical characteristics (DMA) Puncture impact behavior Tear resistance Steam jet test Result values / rating (e.g. with reference pictures or table values / ratings)	DMA ISO 6721-5 Instr. puncture impact test ISO 6603-2 ASTM D3763 Static puncture test ISO 12236 ASTM D4833 Steam jet test DBL 5416 ISO 16925 Impact resistance ISO 7765-1 Tear resistance – trouser ISO 6383-1 Tear resistance – Elmendorf ISO 6383-2
	Textile and textile products	Tensile properties Tear resistance	Tensile test – strip ISO 13934-1 Tensile test – grab ISO 13934-2 Tear test – Elmendorf ISO 13937-1 Tear test – trouser ISO 13937-2 Tear test – wing ISO 13937-3 Tensile test ISO 1421
	Rubber	Tensile properties Tear resistance Compression set Tension set	Tensile test ISO 37 ASTMD412 Tear resistance ISO 34 (Trouser/angle test piece) Compression set ISO 815-1/-2 Tensile set ISO 2285
	Cardboard/paper	Flexural properties	Modulus in bending – bending strength DIN EN 310 DBL 5472

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
Thermal testing/ burning behaviour	Plastic and plastic products	Melting point and melting enthalpy Glass transition temperature Oxidation induction time (OIT value) Filler content Black carbon content Dispersion of black carbon Coefficient of linear thermal expansion Softening temperature Heat deflection temperature (HDT) Burning rates / burning behavior Glow wire ignition temperature (GWIT)	DSC-Analysis – melting point and enthalpy ISO 11357-3 ASTM D3418 DSC-Analysis – glass transition temperature ISO 11357-2 ASTM D3418 DSC-Analysis – OIT ISO 11357-6 ASTM D3895 Thermogravimetry (TGA) – filler content ISO 11358 Black carbon content geosynthetics ISO 11358 ASTM D4218 ASTM D5596 Linear thermal expansion ISO 11359 Vicat softening temperature ISO 306 ASTM D1525 Heat deflection temperature ISO 75 ASTM D648 Burning behavior FMVSS 302 DIN 75200 Burning behaviour UL 94 V / HB Burning behaviour foams FMVSS 302 DBL 5307 Glow wire test DIN EN 60695-2-13
	Textiles and textile products	Melting point and melting enthalpy Burning rate	DSC-Analysis (woven goods) ISO 11357-3 Burning rate textiles FMVSS 302/DIN 75200

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
	Elastomers	Glass transition temperature Black carbon content	DSC-Analysis – glass transition temperature ISO 11357-2 Thermogravimetry (TGA) – black carbon content ISO 11358
Hardness testing	Plastic and plastic products	Hardness	Hardness Shore D ISO 868 Ball indentation hardness ISO 2039-1 Hardness foams ISO 2439 ASTM D3574 Compression stress value foams ISO 3386-1 DBL 5452 Barcol hardness DIN EN 59 ASTM D2583
	Rubber	Hardness	Hardness Shore A ISO 868 ISO 7619 ISO 48 ASTM D2240 IRHD-Hardness (Method M and N) ISO 48
Density/mass per unit area	Plastic and plastic products	Density Apparent density	Density ISO 1183-1 Density ASTM D792 Apparent density (foams) ISO 845
	Textiles and textile products	Mass per unit area/ grammage	Mass per unit area DIN EN 12127 ISO 3801
	Rubber	Density	Density ISO 2781

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
Rheological properties	Plastics and plastic products	Melt flow rate (MFR) and melt volume rate (MVR) Solution viscosity / viscosity number Fluidity Apparent viscosity Complex shear viscosity (memory modulus, loss modulus, viscosity)	Melt index MFR/MVR ISO 1133 Melt index ASTM D1238 Viscosity number ISO 307 - sulfuric acid - m-cresol - formic acid Viscosity number of PBT ISO 1628-5 Fluidity – capillary rheometer ISO 11443 Parallel plate rheometer ISO 6721-10
	Rubber	Mooney Viscosity	Mooney viscosity ISO 289-1
Optical testing/ Surface testing	Plastics and plastic products	Gloss level Colour difference Abrasion Erichsen-Hardness Scratch resistance Contact angle and surface energy Roughness characteristics (contact free) Roughness characteristics (profile method) Transparency/haze	Gloss reading ISO 2813 Colour measurement 8°/ 45° – ΔE, ΔL, Δa, Δb DIN 53236 ISO 7724 Scratch resistance PV 3952 Erichsen-Hardness pencil ISO 1518 Contact angle and surface energy DIN 55660-2 Roughness (surface/line) ISO 4287 ISO 25178-2 Roughness (profile method) ISO 4287 ISO 4288 Abrasion by abrasive wheels ISO 9352 Transparency – haze (films) ISO 14782

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
	Textiles and textile products	Colour measurement Whiteness measurement	Colorimetry of textiles ΔE, ΔL, Δa, Δb Whiteness measurement according to Ganz
Environmental simulation	Plastics and plastic products	Change in optical properties (e.g. colour and gloss) Change in mechanical properties Time to failure	Light fastness ISO 105-B06 ISO 4892 ASTM G155 Sunlight simulation DIN 75220 Exposure to light – UV lamps ISO 4892-3 ASTM G154 Environmental stress cracking DIN EN 14576 ASTM D5397
	Aluminum wheels Reference specimens Painted metal plates	Corrosion properties Mass loss	Aluminum wheels – corrosion testing (Filiform and CASS) DBL 7381 Corrosion testing ISO 9227
Permeation	Plastics and plastic products	Water vapour transmission rate Gas transmission rate	Water vapour transmission rate ISO 15106-3 Gas transmission rate ISO 15105-2
Water content, water absorption	Plastics and plastic products	Water content Water absorption	Water content (Karl-Fischer) ISO 15512 Water content (Aquatrac®) Water absorption ISO 62
Thickness measurement	Plastics and plastic products	Thickness	Film Thickness ISO 4593 Thickness at specified pressures ISO 9863-1
	Textiles and textile products	Thickness	Thickness of nonwovens ISO 9073-2 Thickness ISO 2286-3

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
Other physical properties	Plastics and plastic products	Physical properties	Coefficients of friction (films) ISO 8295 Dimensional stability EN 1107-2 Resistance to internal pressure ISO 1167-1/-2 Ring stiffness (pipes) ISO 9969 Sealed-seam strength (films) DIN 55529 Adhesion of multilayer pipes ISO 17454 Ash content ISO 1172 Quantitative infrared spectroscopy
	Rubber	Physical properties	Rebound resilience ISO 4662 DIN 53512 Abrasion ISO 4649 Increase in mass ISO 1817 Solvent extract of rubber ISO 1407
Colour fastness testing	Textiles and textile products	Fastness to light Fastness to washing Fastness to dry cleaning Fastness to water Fastness to perspiration Fastness to rubbing	Colour fastness to light ISO 105-B02 and B04 Colour fastness to washing ISO-C06 and C08 Colour fastness dry cleaning ISO 105-D01 Colour fastness to water ISO 105-E01 Colour fastness perspiration ISO 105-E04 Colour fastness to rubbing – Crockmeter ISO 105-X12

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
Functional properties and fabric properties	Textiles and textile products	Functional properties	Permeability to air ISO 9237 Demand absorbency ISO 9073-12 Dimensional change in washing ISO 5077 ISO 6330 Hydrostatic pressure test ISO 811 Thermal and water vapour resistance ISO 11092 Industrial washing and colour change ISO 15797 Flexure resistance (flexometer) ISO 32100 Resistance to damage by flexing ISO 7854
		Fabric properties	pH value ISO 3071 Abrasion resistance – Martindale ISO 12947-2 Pilling properties (pilling box) ISO 12945-1 Pilling properties (Martindale) ISO 12945-2 Bursting strength and bursting distension ISO 13938-2 Slippage resistance of yarns ISO 13936-1/-2 Construction of fabric/ Maximum force seam ISO 13935-1

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
Determination of fibre blends	Textiles and textile products	Proportion of a fibre blend Qualitative determination of fibre blends	Quantitative determination of a fibre blend ISO 1833: - Cotton fibres - Polyester fibres - Acrylic fibres - Protein fibres - Viscose fibres - Polyamide fibres Qualitative determination of a fibre blend
Emission testing	materials for furnishing rooms and interiors	Odour test Formaldehyde emission Total carbon emission Fogging behaviour	Odour test VDA 270 PV 3900 Formaldehyde emission VDA 275 PV 3925 Total carbon emission VDA 277 PV 3341 Fogging method A DIN 75201 Fogging method B DIN 75201 PV 3015
Physical, physical-chemical and chemical analysis	Raw and starting materials and intermediate products	Flame retardants	Textiles – extractable metals DIN EN 16711-2 Textiles – perfluorinated compounds Heavy metals ISO 21392 Care products

Testing area	Matrix/product*	Measured variable/ test parameters*	Testing schemes (examples)
		Ingredients Additives Residues Contaminants Extraction analysis Identification Identification with microscope Acidity/pH value Specific weight/density Colour fastness Metals/heavy metals Dyes Mineral oil constituents Printing inks and printing ink constituents	Plastics – Overall migration (one sided contact) DIN EN 1186-3 Plastics – specific migration (caprolactam) Mineral oil in board and paper Board, paper – formaldehyde in aqueous extract DIN EN 1541

Abbreviations used:

DIN	German Institute for Standardization e. V.
EN	European standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
FMVSS	Federal Motor Vehicle Safety Standard
ASTM	American Society for Testing and Materials
PV	Company Standard of Volkswagen AG
VDA	German Association of the Automotive Industry
UL	Underwriters Laboratories
DBL	Company Standard of Daimler AG