

# Deutsche Akkreditierungsstelle

## Annex to the Accreditation Certificate D-PL-20227-01-00 according to DIN EN ISO/IEC 17025:2018

**Valid from:** 13.09.2023

**Date of issue:** 18.06.2024

Holder of accreditation certificate:

**Polymer Service GmbH Merseburg  
Geusaer Straße 81f, 06217 Merseburg**

with the location

**Polymer Service GmbH Merseburg  
Mechanische Prüfung von Kunststoffen - MPK -  
Geusaer Straße 81f, 06217 Merseburg**

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory 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 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

*This certificate annex is only valid together with the written accreditation certificate and 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>.*

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Tests in the fields:

**Mechanical, fracture mechanical, physical and colorimetric testing of plastics and elastomers**

**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 methods within the flexible scope of accreditation.**

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**1 Mechanical-technological tests**

**1.1 Hardness test**

DIN ISO 48 2016-09	Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD)
DIN ISO 48-2 2021-02	Rubber, vulcanized or thermoplastic - Determination of hardness - Part 2: Hardness between 10 IRHD and 100 IRHD
DIN ISO 48-4 2021-02	Rubber, vulcanized or thermoplastic - Determination of hardness - Part 4: Indentation hardness by durometer method (Shore hardness)
DIN ISO 7619-1 2012-02	Rubber, vulcanized or thermoplastic - Determination of indentation hardness - Part 1: Durometer method (Shore hardness)
DIN EN ISO 2039-1 2003-06	Plastics - Determination of hardness - Part 1: Ball indentation method
DIN EN ISO 2039-2 2000-01	Plastics - Determination of hardness - Part 2: Rockwell hardness
DIN 53505 2000-08	Testing of rubber - Shore A and Shore D hardness test

**1.2 Tensile test**

ISO 37 2017-11	Rubber, vulcanized or thermoplastic - Determination of tensile stress-strain properties
DIN EN ISO 527-1 2019-12	Plastics - Determination of tensile properties - Part 1: General principles
DIN EN ISO 527-2 2012-06	Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics
DIN EN ISO 527-3 2019-02	Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets
DIN EN ISO 527-4 2022-03	Plastics - Determination of tensile properties - Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites

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DIN EN ISO 527-5 2010-01	Plastics - Determination of tensile properties - Part 5: Test conditions for unidirectional fibre-reinforced plastic composites
DIN 53457 1987-10	Testing of plastics; determination of the elastic modulus by tensile, compression and bend testing
DIN 53504 2017-03	Testing of rubber - Determination of tensile strength at break, tensile stress at yield, elongation at break and stress values in a tensile test
DIN 65378 1989-11	Aerospace; fiber reinforced plastics; testing of unidirectional laminates; tensile test transverse to fiber direction
DIN 65469 1992-08	Aerospace; fibre-reinforced plastics; tensile test of monolayer flat tension specimens

**1.3 Bend Test**

DIN EN ISO 178 2019-08	Plastics - Determination of flexural properties
DIN EN ISO 14125 2011-05	Fibre-reinforced plastic composites - Determination of flexural properties
DIN EN 2562 1997-05	Aerospace series - Carbon fibre reinforced plastics - Unidirectional laminates; flexural test parallel to the fibre direction

**1.4 Compression test**

DIN EN ISO 604 2003-12	Plastics - Determination of compressive properties
DIN EN 514 2018-04	Plastics - Poly(vinyl chloride) (PVC) based profiles - Determination of the strength of welded corners and T-joints
ASTM D 695 2015	Standard Test Method for Compressive Properties of Rigid Plastics

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**1.5 Impact test**

DIN EN ISO 179-1 2010-11	Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test
DIN EN ISO 179-2 2020-09	Plastics - Determination of Charpy impact properties - Part 2: Instrumented impact test
DIN EN ISO 180 2020-03	Plastics - Determination of Izod impact strength
DIN EN ISO 8256 2005-05	Plastics - Determination of tensile-impact strength
DIN 53435 2018-09	Testing of plastics - Bending test and impact test on Dynstat test specimens

**2 Other destructive test methods**

**2.1 Drop test (puncture test)**

DIN EN ISO 7765-1 2004-10	Plastics film and sheeting - Determination of impact resistance by the free-falling dart method - Part 1: Staircase methods
DIN EN 477 2018-04	Plastics - Poly(vinyl chloride) (PVC) based profiles - Determination of the resistance to impact of profiles by falling mass

**2.2 Fracture mechanics**

ISO 13586 2018-08	Plastics - Determination of Fracture Toughness ( $G_{IC}$ and $K_{IC}$ ) - Linear Elastic Fracture Mechanics (LEFM) Approach
ISO/CD TS 28660 2010-09	Plastics - Determination of J-R curves
ASTM D 6068 2010	Standard Test Method for Determining J-R Curves of Plastic Materials
ASTM - STP 936 1986	Instrumented Impact Testing of Plastics and Composite Materials
ESIS P2-92 1992	Procedure for Determining the Fracture Behaviour of Materials

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ESIS TC4 2000	A Testing Protocol for Conducting J-Crack Growth Resistance Curve Test on Plastics
DVM 001 1986-09	Metrological Requirements for the Instrumented Charpy Impact Test

No flexibilization applies to the following test procedures:

MPK-IKBV 2016-08	Instrumented Charpy Impact Test (ICIT) - Procedure for Determining the Crack Resistance Behaviour Using the Instrumented Impact Test
MPK-IKZV 2014-07	Testing of Plastics - Instrumented Tensile-Impact Test (ITIT) - Procedure for Determining the Crack Resistance Behaviour Using the Instrumented Tensile-Impact Test

**2.3 Tear Test**

DIN ISO 34-1 2016-09	Rubber, vulcanized or thermoplastic - Determination of tear strength - Part 1: Trouser, angle and crescent test pieces
DIN 53363 2003-10	Testing of plastic films - Tear test using trapezoidal test specimen with incision

**2.4 Shear strength**

DIN EN ISO 14130 1998-02	Fibre reinforced plastic composites - Determination of apparent interlaminar shear strength by short beam-method
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**2.5 Vicat softening temperature**

DIN EN ISO 306 2014-03	Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST)
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**2.6 Heat distortion resistance**

DIN EN ISO 75-1 2020-06	Plastics - Determination of temperature of deflection under load - Part 1: General test method
DIN EN ISO 75-2 2013-08	Plastics - Determination of temperature of deflection under load - Part 2: Plastics and ebonite
DIN EN ISO 75-3 2004-09	Plastics - Determination of temperature of deflection under load - Part 3: High-strength thermosetting laminates and long-fibre-reinforced plastics

**2.7 Determination of density**

DIN EN ISO 1183-1 2019-09	Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method
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**2.8 Shrinkage**

DIN EN 479 2018-04	Plastics - Poly(vinyl chloride) (PVC) based profiles - Determination of heat reversion
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**2.9 Adhesive behavior**

DIN EN ISO 2409 2020-12	Paints and varnishes - Cross-cut test
DIN EN 1372 2015-06	Adhesives - Test method for adhesives for floor and wall coverings - Peel test
DIN EN ISO 22631 2019-11	Adhesives - Test method for adhesives for floor and wall coverings - Peel test

**2.10 Determination of compression set**

DIN ISO 815-1 2016-09	Rubber, vulcanized or thermoplastic - Determination of compression set - Part 1: At ambient or elevated temperatures
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**2.11 Abrasion method**

DIN ISO 4649 2021-06	Rubber, vulcanized or thermoplastic - Determination of abrasion resistance using a rotating cylindrical drum device
DIN 53516 1987-06	Testing of rubber and elastomers; determination of abrasion resistance

**2.12 Determination of thermostability**

DIN EN ISO 182-3 2001-02	Plastics - Determination of the tendency of compounds and products based on vinyl chloride homopolymers and copolymers to evolve hydrogen chloride and any other acidic products at elevated temperatures - Part 3: Conductometric method
DIN 53381-1 1983-05	Testing of plastics; determination of thermostability of polyvinyl chloride (PVC); dehydrochlorination methods

**3 Optical methods**

**3.1 Determination of colour**

DIN EN ISO 105-A01 2010-05	Textiles - Tests for colour fastness - Part A01: General principles of testing
DIN EN ISO 105-A03 2020-02	Textiles - Tests for colour fastness - Part A03: Grey scale for assessing staining
DIN ISO 4582 2019-03	Plastics - Determination of changes in colour and variations in properties after exposure to glass-filtered solar radiation, natural weathering or laboratory radiation sources
ISO 7724-1 1984-10	Paints and varnishes - Colorimetry - Part 1: Principles
ISO 7724-2 1984-10	Paints and varnishes - Colorimetry - Part 2: Colour measurement

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DIN EN ISO/CIE 11664-4  
2020-03                      Colorimetry - Part 4: CIE 1976 L\*a\*b\* colour space

DIN EN 20105-A02  
1994-10                      Textiles - Tests for colour fastness - Part A02: Grey scale for assessing change in colour

**3.2        Determination of Gloss**

DIN EN ISO 2813  
2015-02                      Paints and varnishes - Determination of gloss value at 20°, 60° and 85°

**4           Accelerated ageing**

**4.1        Artificial weathering**

DIN EN 513  
2019-03                      Plastics - Poly(vinyl chloride) (PVC) based profiles - Determination of the resistance to artificial weathering

DIN EN ISO 4892-1  
2016-10                      Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance

DIN EN ISO 4892-2  
2021-11                      Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps

DIN EN ISO 4892-3  
2016-10                      Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps

**4.2        Accelerated ageing**

DIN EN 478  
2018-04                      Plastics - Poly(vinyl chloride) (PVC) based profiles - Determination of the appearance after exposure at 150 °C

DIN 53508  
2000-03                      Testing of rubber - Accelerated ageing

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**Abbreviations used:**

ASTM	American Society for Testing and Materials
ASTM - STP	ASTM - Special Technical Publication
DIN	German institute for standardization
DVM	German Association for Materials Research and Testing e.V.
EN	European Standard
ESIS	European Structural Integrity Society
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
MPK	In-house procedures of the testing laboratory MPK Merseburg

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