Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-PL-11140-21-01 according to DIN EN ISO/IEC 17025:2018

Valid from: **05.06.2024**

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This annex is a part of the accreditation certificate D-PL-11140-21-00.

Holder of partial accreditation certificate:

Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung eingetragener Verein
Hansastraße 27c, 80686 München

with the location

Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung eingetragener Verein
Fraunhofer-Institut für Windenergiesysteme (IWES)
Am Seedeich 45, 27572 Bremerhaven

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.

Testing within the field:

determination of physical properties of fiber reinforced plastics and composite materials using mechanical and thermal tests

Within the given testing field, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the free choice of standard orequivalent testing methods. The listed testing methods are exemplary.

The testing laboratory maintains a current list of all testing procedures within the flexible scope of accreditation.

1. Tensile testing of fiber reinforced plastics and composite materials

DIN EN ISO 527-4 1997-07	Plastics – Determination of tensile properties – Part 4: Test conditions for isotropic and anisotropic fibre-reinforced plastic composites
DIN EN ISO 527-5 2010-01	Plastics – Determination of tensile properties – Part 5: Test conditions for unidirectional fibre-reinforced plastic composites
DIN EN ISO 14129 1998-02	Fibre-reinforced plastic composites – Determination of the in-plane shear stress/shear strain response, including the in-plane shear modulus and strength, by ± 45° tension test method
ISO 13003 2003-12	Fibre-reinforced plastics – Determination of fatigue properties under cyclic loading conditions
ASTM D 3039/D 3039M 2017	Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials
ASTM D 3479/D 3479M 2012	Standard Test Method for Tension-Tension Fatigue of Polymer Matrix Composite Materials
ASTM D 7078/D 7078M 2012	Standard Test Method for Shear Properties of Composite Materials by V-Notched Rail Shear Method

2. Compressive testing of fiber reinforced plastics and composite materials

DIN EN ISO 14126 2000-12	Fibre-reinforced plastic composites – Determination of compressive properties in the in-plane direction
ASTM D 6641/D 6641M 2016	Standard Test Method for Compressive Properties of Polymer Matrix Composite Materials Using a Combined Loading Compression (CLC) Test Fixture

3. Determination of shear and flexural strength on fiber reinforced plastics and composite materials

DIN EN ISO 14130 1998-02	Fibre reinforced plastic composites – Determination of apparent interlaminar shear strength by short beam-method

4. Determination of properties of fiber reinforced plastics and composite materials by thermal stress

DIN EN ISO 11357-2 2014-07	Plastics – Differential scanning calorimetry (DSC) – Part 2: Determination of glass transition temperature and glass transition step height
DIN EN 2331 1993-04	Aerospace series – Textile glass fibre preimpregnates – Test method for the determination of the resin and fibre content and mass of fibre per unit area

test item	type of testing	test parameter	characteristic test method
fiber reinforced plastics and composite materials	tensile testing	force	DIN EN ISO 527-4
		travel	
		strain	
	compressive testing	force	DIN EN ISO 14126
		travel	
		strain	
	Determination of shear and flexural strength	force	DIN EN ISO 14130
		travel	
		strain	
	thermal stress	temperature	DIN EN ISO 11357-2
		weight	

abbreviations used:

ASTM	American Society for Testing and Materials
DIN	German Institute for Standardization
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization