

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-19226-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 07.12.2018

Date of issue: 07.12.2018

Holder of certificate:

**LEISTRITZ Turbinentechnik GmbH
Lempstraße 24, 42859 Remscheid**

Tests in the fields:

technological tests and metallographical analyses at turbine components

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.

Technological tests

DIN EN ISO 6506-1 2015-02	Metallic materials - Brinell hardness test - Part 1: Test method
ASTM E 10 2017	Standard Test Method for Brinell Hardness of Metallic Materials
DIN EN ISO 6507-1 2018-07	Metallic materials - Vickers hardness test - Part 1: Test method
ASTM E 384 2017	Standard Test Method for Microindentation Hardness of Materials

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

Abbreviations used: see last page

*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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DIN EN ISO 6508-1 2016-12	Metallic materials - Rockwell hardness test - Part 1: Test method (here: <i>Scale C</i>)
ASTM E 18 2017	Standard Test Methods for Rockwell Hardness of Metallic Materials (here: <i>Scale C</i>)
DIN EN ISO 6892-1 2017-02	Metallic materials - Tensile testing - Part 1: Method of test at room temperature
DIN EN 2002-001 2007-08 + Amendment 1 2007-08	Aerospace series - Metallic materials - Test methods - Part 1: Tensile testing at ambient temperature
ASTM E 8/E 8Ma 2016	Standard Test Methods for Tension Testing of Metallic Materials
DIN EN ISO 6892-2 2018-09	Metallic materials - Tensile testing - Part 2: Method of test at elevated temperature
DIN EN 2002-002 2007-08	Aerospace series - Metallic materials - Test methods - Part 2: Tensile testing at elevated temperature
ASTM E 21 2017	Standard Test Method for Elevated Temperature Tension Tests of Metallic Materials
DIN EN ISO 148-1 2017-05	Metallic materials - Charpy pendulum impact test - Part 1: Test method (here: <i>only at room temperature</i>)
DIN EN ISO 204 2009-10	Metallic materials - Uniaxial creep testing in tension - Method of test
DIN EN 2002-005 2008-09	Aerospace series - Test methods for metallic materials - Part 005: Uninterrupted creep and stress-rupture testing
ASTM E 139 2011	Standard Test Methods for Conducting Creep, Creep-Rupture, and Stress-Rupture Tests of Metallic Materials
DIN EN ISO 7438 2016-07	Metallic materials - Bend test

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Metallographical analyses

ASTM E 112 2013	Standard Test Methods for Determining Average Grain Size
DIN EN ISO 643 2013-05	Steels - Micrographic determination of the apparent grain size (Evaluation and comparison with standard image series tables)
DIN 54150 1977-08	Non-destructive testing - Impression methods for surface examination (Replica-technique) <i>(withdrawn standard)</i>
ASTM E 1447 2009	Standard Test Method for Determining of Hydrogen in Titanium and Titanium Alloys by Inert Gas Fusion Thermal Conductivity / Infrared Detection Method

abbreviations used:

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

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