

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-ZE-11052-02-02 according to DIN EN ISO/IEC 17065:2013

Period of validity: 21.12.2017 to 20.12.2022

Date of issue: 13.07.2020

Holder of certificate:

TÜV Rheinland Industrie Service GmbH
Zertifizierungsstelle Energiesysteme, Renewables, Grid & Automation
Am Grauen Stein, 51105 Köln

at the location

Julius-Vosseler-Str. 42, 22527 Hamburg

Certifications of products, processes and services in the fields:

Type certification of onshore and offshore wind turbines and their components
Framework specifications of the WSV for marking offshore installations

Abbreviations used: see last page

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1. Type certification of onshore and offshore wind turbines and their components, at Cologne location

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| IEC 61400-22 2010-05 | Wind turbines – Part 22: Conformity testing and certification |
| QMA 3.120.01 2017-01 | Implementation of testing and certification of wind energy installations according to IEC 61400-22 |
| QMA 3.120.02 2015-06 | Implementation of testing and certification of wind energy installations according to GL 2010 |
| GL-IV-1 2010-07 and former versions | Guideline for the certification of wind turbines |
| GL-IV-2 2005-06 | Guideline for the certification of offshore wind turbines |

in conjunction with the following set of rules:

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| IEC 61400-1 Ed.3 2005-08 | Wind turbines - Part 1: Design requirements |
| IEC 61400-2 Ed.3 2013-12 | Wind turbines - Part 2: Design requirements for small wind turbines |
| IEC 61400-3 Ed.1 2009-02 | Wind turbines - Part 3: Design requirements for offshore wind turbines |
| IEC 61400-4 Ed.1 2012-12 | Wind turbines - Part 4: Design requirements for wind turbine gearboxes |
| IEC 61400-24 Ed.1 2010-06 | Wind turbines generator systems - Part 24: Lightning protection |
| IEC 61400-25-1 Ed.2 2017-07 | Wind turbines - Part 25-1: Communications for monitoring and control of wind power plants - Overall description of principles and models |

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| IEC 61400-25-2 Ed.1 2015-06 | Wind turbines - Part 25-2: Communications for monitoring and control of wind power plants - Information models |
| IEC 61400-25-3 Ed.1 2006-12 | Wind turbines - Part 25-3: Communications for monitoring and control of wind power plants - Information exchange models |
| IEC 61400-25-4 Ed.1 2016-11 | Wind turbines - Part 25-4: Communications for monitoring and control of wind power plants - Mapping to communication profile |
| IEC 61400-25-5 Ed.1 2006-12 | Wind turbines - Part 25-5: Communications for monitoring and control of wind power plants - Conformance testing |
| IEC 61400-25-6 Ed.1.0 2010-11 | Wind turbines - Part 25-6: Communications for monitoring and control of wind power plants – Logical note classes and data classes for condition monitoring |
| VdS 3523 2008-07 | Wind turbines – Fire Safety Guide |
| GL Operating 24/7 Revision: 2 2009-01 | GL Wind Technical Note - Certification of Fire Protection Systems for Wind Turbines - Certification Procedures |
| DIN EN 50308 2014-03 | Wind turbines. Protective measures. Requirements for design, operation and maintenance |
| DIBt Reihe B, Heft 8 2012-12 | Richtlinie für Windenergieanlagen - Einwirken und Standardsicherheitsnachweise für Turm und Gründung |
| BSH-Standard 7004 Fortschreibung 2 2014-02 | Baugrunderkundung für Offshore-Windenergieanlagen |
| BSH-Standard 7005 Fortschreibung 1 2015-07 | Konstruktive Ausführung von Offshore-Windenergieanlagen |

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2. Framework specifications of the WSV for marking offshore installations at the location Cologne and Hamburg

QMA 3.120.04 Prüfung der Kennzeichnung von Offshore-Anlagen
2017-10

in conjunction with the following set of rules:

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| Rahmenvorgaben der WSV, Version 2.1 2016-03 | Generaldirektion Wasserstraßen und Schifffahrt - Rahmenvorgaben zur Gewährleistung der fachgerechten Umsetzung verkehrstechnischer Auflagen im Umfeld von Offshore-Anlagen, hier: Kennzeichnung, Version 2.1, Stand 01.03.2016 |
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Abbreviations used:

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| BSH | Bundesamt für Seeschifffahrt und Hydrographie (Bundesrepublik Deutschland) |
| DIBt | Deutsches Institut für Bautechnik |
| DIN | Deutsches Institut für Normung e.V. |
| EN | Europäische Norm |
| FDIS | Final Draft International Standard |
| IEC | International Electrotechnical Commission |
| ISO | International Organization for Standardization |
| IMS | Integrierte Management Systeme |
| LBO | Landesbauordnung |
| MBO | Musterbauordnung |
| TAPS | Type Approval - Provisional Scheme, Ministry of New and Renewable Energy, India |
| TS | Technical Specifications |