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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 25383-2025

Replacing GB/T 25383-2010

Wind energy generation systems - Wind turbine blades

风能发电系统 风力发电机组风轮叶片

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 25383-2010 "Wind turbine blades". Compared with GB/T 25383-2010, except for the structure in addition to adjustments and editorial changes, the main technical changes are as follows.

- Added the building block verification method for composite material structure design (see 6.1.2);
- Added design load requirements (see 6.1.4);
- Changed the aerodynamic design requirements (see 6.3, 6.1 of the 2010 edition);
- Added design and manufacturing requirements (see 6.5);
- Changed the definition and value of local safety factor of materials in structural strength analysis (see 6.6.4, Appendix A of the 2010 edition);
- Added the ultimate strength check of sandwich structure (see 6.6.5.5);
- Added mechanical fastener structure interface verification (see 6.6.5.10);
- Changed the manufacturing requirements (see Chapter 7, Chapter 8 and Chapter 9 of the 2010 edition);
- Added blade maintenance requirements (see 8.3).

This document is equivalent to IEC 61400-5:2020 "Wind energy generation systems Part 5: Wind turbine rotor blades".

The following minimal editorial changes were made to this document.

- To coordinate with the existing standards, the name of the standard is changed to "Wind turbine blades for wind power generation systems".

Introduction

The rotor blade is one of the most critical components in the wind turbine system. This document provides the design and manufacture of wind turbine rotors.

Minimum requirements for blades.

This document presents a method for the structural design of wind turbine rotor blades, covering blade characteristics, aerodynamic design, material requirements and in addition, in order to effectively promote the blade design to fit the actual production environment as much as possible, this document also the relevant requirements for blade manufacturing

design are given.

Encourage the formulation of wind turbine rotor blade structural design requirements in an innovative, verified, quality and tested manner.

In addition to considering the above items, the author can also choose a lower local safety level based on factors such as the rigor of model verification and the correlation with test results.

Full coefficient.

In order to ensure that the production environment of the blades meets the design and manufacturing requirements, this document provides the quality management system related to blade manufacturing.

In addition, the requirements for blade transportation, hoisting, operation and maintenance are also given at the end of this document.

Wind power generation system wind turbine rotor blades

1 Scope

This document specifies the requirements for ensuring the engineering integrity of wind turbine rotor blades and their proper operational safety throughout the blade's design life.

All levels of relevant requirements, including.

- Pneumatic and structural design;
- Material selection, evaluation and testing;
- Manufacturing of blades (including related quality management);
- Transportation, installation, operation and maintenance.

This document is intended to provide technical reference for wind turbine blade designers, manufacturers, purchasers, operators, third-party organizations and material suppliers.

and determine the certification requirements for the blades.

This document gives detailed information on the requirements for certification to the current IEC RE certification system and other IEC standards related to wind turbine blades.

When used for certification, the applicability of this document should be determined based on the scope of certification and the relevant modules of the IEC RE certification system.

The certification of IEC RE and other IEC wind turbine blade standards should be based on the scope of certification and the relevant certification modules of the IEC RE system.

The definition of a rotor blade refers to all components integrated into the blade design, excluding removable bolts and mounting brackets in the blade root connection.

The main material system of the integrated system is fiber reinforced plastic (FRP). This document is applicable to the rotor blades of horizontal axis wind turbines.

Applicable to small wind turbines designed according to IEC 61400-2.

At the time of the preparation of this document, the vast majority of blades are horizontal axis wind turbine rotor blades manufactured from fiber reinforced plastics.

Most of the principles given in this document are equally applicable to wind turbine blades of any construction, size and material.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

document.

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Note: GB/T 19000-2016 Quality Management System Fundamentals and Vocabulary (ISO 9000:2015, IDT) Note. GB/T 19001-2016 Quality Management System Requirements (ISO 9001:2015, IDT) Note. GB/T 18253-2018 Types of inspection documents for steel and steel products (ISO 10474:2013, IDT) Note. GB/T 3359-2009 Statistical processing and interpretation of data - Determination of statistical tolerance intervals (ISO 16269-6:2005, IDT) ISO/IEC 17021-1 Conformity assessment requirements for bodies providing management system audit and certification Part 1: Requirements systems-Part 1: Requirements)