

ICS 27.180

CCS F 11



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

GB/T 25384-2018

Replacing GB/T 25384-2010

Wind turbines -- Full scale structural testing of rotor blade

Issued on: December 28, 2018

Implemented on: July 1, 2019

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 25384-2010 "Full-size structural test of wind turbine blades for wind turbines". And GB/T 25384-

In addition to editorial changes in.2010, the main technical changes are as follows.

- Increased static test after fatigue test (see Chapter 1);
- Removed the description of the less commonly used strength-based test methods (see Chapter 8 of the.2010 edition);
- Adjusted the impact of load introduction (see Chapter 9, Chapter 10 of the.2010 edition);
- Revised the description of the failure pattern (see Chapter 11, Chapter 11 of the.2010 edition);
- Delete the contents of the Chapter 14 component test in the.2010 edition of the standard;
- Delete the description of the test equipment example in Appendix D of the.2010 edition standard;
- Add Appendix A for test alternatives, Appendix B for test areas, and Appendix D for test loads.

Recognize, Appendix F for the introduction of the error factor for the fatigue formula.

This standard uses the translation method equivalent to IEC 61400-23.2014 "Wind Generators Part 23. Full-size structure of wind turbine blades test".

For ease of use, this standard has been edited as follows.

- Change the standard name to "Full-size structural test of wind turbine blades for wind

turbines".

This standard was proposed by the China Machinery Industry Federation.

This standard is under the jurisdiction of the National Wind Machinery Standardization Technical Committee (SAC/TC50).

This standard was drafted. Beijing Jianheng Certification Center Co., Ltd., China Agricultural Mechanization Science Research Institute Hohhot Branch, Sinoma Branch

Technical Wind Power Blade Co., Ltd., Lianyungang Zhongfu Lianzhong Composite Materials Group Co., Ltd., Xinjiang Goldwind Technology Co., Ltd., Guodian

United Power Technology Co., Ltd., Shanghai Electric Wind Power Group Co., Ltd., Zhongke Yuneng Technology Development Co., Ltd., Jilin Chongtong Chengfei New Materials

Stock Company, Zhuzhou Times New Materials Technology Co., Ltd., Mingyang Smart Energy Group Co., Ltd., Zhejiang Yunda Wind Power Co., Ltd.

Company, Luoyang Shuangrui Wind Power Blade Co., Ltd., Vision Energy (Jiangsu) Co., Ltd.

Introduction

Wind turbine blades are a key component of wind turbines. This standard requires the full-size test of the blade during the certification process and the test knot.

The assessment of the results is explained.

This standard does not require different test methods independently researched and developed by different countries and laboratories at different historical stages.

In addition, in order to verify some of the important design assumptions required for load calculation, this standard contains the tests required to determine blade characteristics.

If the security of the system can be proved, the relevant requirements in this standard can be modified.

This standard is based on IEC TS61400-23.2001. Compared with TS, this standard only applies to load testing and its basic requirements and principles.

Line description.

Wind Turbine

Full-size structural test of wind turbine blades

1 Scope

This standard specifies the requirements for full-scale structural test of wind turbine blades, and describes and evaluates the test results.

This standard applies to manufacturers and third-party review bodies for blade test integrity assessment.

This standard contains the following tests.

- * Static test;
- * fatigue test;
- * Static test after fatigue test;
- Tests to determine other characteristics of the blade.

The purpose of the test is to confirm that all blades of a certain type of blade meet the acceptable probability level of the design assumption.

This standard assumes that the parameters defined in the test based on the wind turbine standard GB/T 18451.1 or its equivalent are valid.

Design load and blade material data should be considered when calculating and evaluating test loads. The design load and actual load are not evaluated in this standard.

Within the scope.

This standard is applicable to the full-scale structural test of horizontal-axis wind turbine blades. The blades are mainly composed of fiber reinforced plastic, wood or epoxy resin.

to make. Most of the principles in this standard can be applied to blades for wind turbines of different configurations and blade tests of different sizes and materials.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2900.53-2001 Electrotechnical terminology wind turbine (IEC 60050-415.1999, IDT)

GB/T 18451.1-2012 Wind turbine design requirements (IEC 61400-1.2005, IDT)

GB/T 27025-2008 General requirements for testing and calibration laboratory capabilities (ISO /IEC 17025.2005, IDT)

ISO 2394.1998 General Principles of Structural Reliability
(Generalprinciplesonreliabilityforstructures)

3 Terms and definitions

The following terms and definitions as defined in GB/T 2900.53-2001 apply to this document.

3.1

Loader actuator

A device that can be controlled to apply a constant load or to vary loads and displacements.

3.2

Leaf root bladeroot

The part of the blade that is connected to the hub.

3.3

Blade subsystem bladesubsystem

A collection of projects capable of defining targets and functions defined on the blade (eg, lightning protection subsystem, pneumatic brake subsystem, monitor)