Wind energy generation systems - Part 5: Wind turbine blades

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NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 61400-5:2020 sisaldab Euroopa standardi EN IEC 61400-5:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 61400-5:2020 consists of the English text of the European standard EN IEC 61400-5:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 07.08.2020.	Date of Availability of the European standard is 07.08.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61400-5

August 2020

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English Version

Wind energy generation systems - Part 5: Wind turbine blades (IEC 61400-5:2020)

Systèmes de génération d'énergie éolienne - Partie 5: Pales d'éoliennes (IEC 61400-5:2020)

Windenergieanlagen - Teil 5: Rotorblätter von Windenergieanlagen (IEC 61400-5:2020)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 61400-5:2020 E

European foreword

The text of document 88/759/FDIS, future edition 1 of IEC 61400-5, prepared by IEC/TC 88 "Wind energy generation systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61400-5:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-04-21
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-07-21

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050-415	-	International Electrotechnical Vocabulary - Part 415: Wind turbine generator systems	-	-
IEC 61400-1	-	Wind energy generation systems - Part 1: Design requirements	EN IEC 61400-1	-
IEC 61400-2	-	Wind turbines - Part 2: Small wind turbines	EN 61400-2	-
IEC 61400-3-1	-	Wind energy generation systems - Part 3-1: Design requirements for fixed offshore wind turbines	EN IEC 61400-3-1	-
IEC 61400-3-2	-	Wind energy generation systems - Part 3-2: Design requirements for floating offshore wind turbines	-	-
IEC 61400-23	-	Wind turbines - Part 23: Full-scale structural testing of rotor blades	EN 61400-23	-
IEC 61400-24	-	Wind energy generation systems - Part 24: Lightning protection	EN IEC 61400-24	-
ISO/IEC 17021-1	-	Conformity assessment - Requirements for bodies providing audit and certification of management systems - Part 1: Requirements	EN ISO/IEC 17021-1	-
ISO 10474	-	Steel and steel products - Inspection documents	-	-
ISO 2394	-	General principles on reliability for structures	-	-
ISO 9000	-	Quality management systems - Fundamentals and vocabulary	EN ISO 9000	-

ISO 9001	-	Quality management systems - Requirements	EN ISO 9001	-
-	-	Metallic products - Types of inspection documents	EN 10204	-
ISO 16269-6	-	Statistical interpretation of data - Part 6: Determination of statistical tolerance intervals	-	-

IEC 61400-5

Edition 1.0 2020-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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Wind energy generation systems – Part 5: Wind turbine blades

Systèmes de génération d'énergie éolienne – Partie 5: Pales d'éoliennes

IEC 61400-5:2020-06(en-fr)

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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Systèmes de génération d'énergie éolienne – Partie 5: Pales d'éoliennes

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WIND ENERGY GENERATION SYSTEMS –

Part 5: Wind turbine blades

FOREWORD

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International Standard IEC 61400-5 has been prepared by IEC technical committee 88: Wind energy generation systems.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
88/759/FDIS	88/767/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

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The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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- withdrawn,
- replaced by a revised edition, or
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INTRODUCTION

The blades of a wind turbine rotor are generally regarded as one of the most critical components of the wind turbine system. In this International Standard, a minimum set of requirements for the design and manufacturing of wind turbine blades are defined.

An approach to a structural design process for the blade is set forth in the general areas of blade characteristics, aerodynamic design, material requirements and structural design. Furthermore, in order to efficiently facilitate the transfer of a blade design to the production environment, this document includes demands for designing for manufacturing.

The requirements for structural design of the wind turbine blade have been developed in a manner to reward innovation, validation, quality and testing. Specifically, the designer will be able claim lower partial safety factors based on, among other items, the diligence of the validation of models and the correlation to testing results.

To ensure a production environment that can facilitate the manufacturing of a blade in accordance with the design, the manufacturing requirements included in this document provide a minimum basis for a quality management system and workshop requirements. In addition, requirements for blade handling, operation and maintenance are described in the close of this document.