



# Guidelines for Design of Wind Turbines

The Guidelines for Design of Wind Turbines compiles into one book the engineering knowledge needed by anyone employed with wind turbines.

The Guidelines gives a detailed introduction to all engineering wind turbine subjects. It is widely used as a thorough introduction to wind turbines for students and novices.

At the same time the Guidelines is an indispensable reference book for the professional wind turbine engineers.

The development of Guidelines is the result of a joint effort between Det Norske Veritas and Risø National Laboratory. The development is based on funding from Danish Energy Agency.

The Guidelines is available as a printed book in a handy format. An enclosed CD contains the entire document in a practical pdf-version for easy access.

The Guidelines can be ordered at [www.windturbine.dk](http://www.windturbine.dk) or by submitting the form below.

DNV/Risø's Guidelines for Design of Wind Turbines 2 (ISBN 87-550-2870-5). Hardback book 286 pages plus CD-ROM.

Payment 120.00 EUR per copy excl. VAT (100.00 EUR excl. VAT per additional copy in same order) to be invoiced. All expenses included (administration and shipping). (Danish and EU customers without VAT No., please add 25% VAT).



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**Guidelines for Design  
of Wind Turbines**

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The Guidelines is divided into eleven logical sections, treating the specific subjects of wind turbine engineering. In addition, a number of appendices deal with aspects that refers to wind turbines and engineering in general.

**Wind turbine concepts.**

Conceptual and economical aspects. Energy production...

**Safety and reliability.**

Probabilistic background for design codes and standards. System safety and operation. Methods for evaluation of the safety and reliability of a wind turbine and its components...

**External conditions.**

Environmental conditions: wind, sea state, temperature, earthquakes etc. Basic formulas for representing the environmental loading. Guidelines for dealing with special stability issues, e.g. wind shear and transient wind conditions...

**Loads.**

Calculation of design loads

according to different design methods. Practical approach to aeroelastic modeling. Wave loads for offshore wind turbines...

**Rotor.**

Design of rotor blades and hub...

**Nacelle.**

Design of the main nacelle components such as shaft, bearings, gear, yaw system, couplings and generator...

**Tower.**

Tower concepts and design criteria...

**Foundation.**

Foundation concepts and design criteria, including soil structure interaction...

**Electrical system.**

Electrical components, wind turbines configurations, control strategies and grid connection...

**Manuals.**

User-, installation, service and maintenance manuals...

**Tests and measurements.**

Power performance, load and noise measurements, basic test and blade test...

**Bolt connections.**

Analysis of bolt forces, pre-tension and fatigue...

**Rules of thumb.**

Rules of similarity for wind turbine rotors...

**Fatigue calculations.**

Introduction to different types of fatigue assessment...

**Fem calculations.**

Types of analysis, modeling and documentation...

**Material properties.**

Properties of various materials, commonly used in wind turbines...

**Terms and definitions.**

Definition of common wind turbine terms...

**Tables and conversions.**

Conversion between various units...

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