

Guide for procurement of power station equipment —

Part 5-3: Wind turbines

The European Standard EN 45510-5-3:1998 has the status of a
British Standard

ICS 27.040; 27.100

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National foreword

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- monitor related international and European developments and promulgate them in the UK.

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Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 14, an inside back cover and a back cover.

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Guide for procurement of power station equipment — Part 5-3: Wind turbines

Guide pour l'acquisition d'équipements destinés aux
centrales de production d'électricité —
Partie 5-3: Turbines éoliennes

Leitfaden für die Beschaffung von Ausrüstungen für
Kraftwerke — Teil 5-3: Windturbinen

This European Standard was approved by CEN/CENELEC on 11 December 1997.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN/CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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Foreword

This standard takes the form of a recommendation and is therefore entitled a “Guide”.

This guide for procurement has been prepared by the CEN/CENELEC Joint Task Force Power Engineering (JTFPE) of which the secretariat is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 1998, and conflicting national standards shall be withdrawn at the latest by July 1998.

This guide for procurement has been prepared under mandates given to CEN and CENELEC by the European Commission and the European Free Trade Association.

This guide for procurement is a part of a series of guides mandated to cover the procurement of power station plant and equipment in conformity with European Procurement Directives. The guides are:

EN 45510: Guide for procurement of power station equipment

Part 1: Common clauses

Part 2-1: Electrical equipment — Power transformers

Part 2-2: Electrical equipment — Uninterruptible power supplies

Part 2-3: Electrical equipment — Stationary batteries and chargers

Part 2-4: Electrical equipment — High power static convertors

Part 2-5: Electrical equipment — Motors

Part 2-6: Electrical equipment — Generators

Part 2-7: Electrical equipment — Switchgear and controlgear

Part 2-8: Electrical equipment — Power cables

Part 2-9: Electrical equipment — Cabling systems

Part 3-1: Boilers — Water tube boilers

Part 3-2: Boilers — Shell boilers

Part 3-3: Boilers — Boilers with fluidized bed firing

Part 4-1: Boiler auxiliaries — Equipment for reduction of dust emissions

Part 4-2: Boiler auxiliaries — Gas-air, steam-air and gas-gas heaters

Part 4-3: Boiler auxiliaries — Draught plant

Part 4-4: Boiler auxiliaries — Fuel preparation equipment

Part 4-5: Boiler auxiliaries — Coal handling and bulk storage plant

Part 4-6: Boiler auxiliaries — Flue gas desulfurization (De-SO_x) plant

Part 4-7: Boiler auxiliaries — Ash handling plant

Part 4-8: Boiler auxiliaries — Dust handling plant

Part 4-9: Boiler auxiliaries — Sootblowers

Part 4-10: Boiler auxiliaries — Flue gas denitrification (De-NO_x) plant

Part 5-1: Turbines — Steam turbines

Part 5-2: Turbines — Gas turbines

Part 5-3: Turbines — Wind turbines

Part 5-4: Turbines — Hydraulic turbines, storage pumps and pump-turbines

Part 6-1: Turbine auxiliaries — Deaerators

Part 6-2: Turbine auxiliaries — Feedwater heaters

Part 6-3: Turbine auxiliaries — Condenser plant

Part 6-4: Turbine auxiliaries — Pumps

Part 6-5: Turbine auxiliaries — Dry cooling systems

Part 6-6: Turbine auxiliaries — Wet and wet/dry cooling towers

Part 6-7: Turbine auxiliaries — Moisture separator reheaters

Part 6-8: Turbine auxiliaries — Cranes

Part 6-9: Turbine auxiliaries — Cooling water systems

Part 7-1: Pipework and valves — High pressure piping systems

Part 7-2: Pipework and valves — Boiler and high pressure piping valves

Part 8-1: Control and instrumentation

*EN 45510 Part 1 contains those clauses common to all the above guides giving the provisions of a non **equipment** specific nature for use in the procurement of power station plant. EN 45510 is the responsibility of JTFPE. The so called “common clauses”, as appropriate, also appear in italics in the documents specific to particular **equipment**.*

Where paragraphs of “common clauses” are omitted, each paragraph omitted is indicated by the symbol ¶¶¶¶.

*In this guide, words in **bold type** indicate that they have the meaning given in the definitions, clause 3.*

*In this guide, words and sentences not in italics are specific to this guide and refer to the particular **equipment** covered.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This standard gives guidance on writing the technical **specification** for the procurement of wind turbines for use in electricity generating stations (**wind power stations**).^{*)} Other possible applications of such **equipment** have not been considered in the preparation of this guide.

This guide covers **wind turbine generator systems (WTGS)** with swept area equal to or larger than 40 m².

This guide for procurement of wind turbines has been prepared to be used with the existing International Standard IEC 1400-1, it should, therefore, be read in addition and complementary to the International Standard.

The **equipment** covered by this guide is defined by its function rather than design type. Therefore, the guidance to the **specification** is stated in performance terms rather than being specified by a detailed description of the **equipment** to be supplied.

This guide indicates to potential **purchasers** how their **specification** should be prepared so that:

- the **equipment** type and capacity interfaces correctly with other elements of the systems;
- predicted performance is achieved;
- ancillary **equipment** is properly sized;
- **reliability, availability** and safety requirements are achieved;
- proper consideration is given to the evaluation process and the quality measures to be applied.

This guide does not determine the type of **specification** (e.g. detailed, performance, functional) or the extent of supply for any given contract which is normally decided on the basis of the **purchaser's** project strategy. It does not cover:

- any commercial, contractual or legal issues which are normally in separate parts of an **enquiry**;
- any allocation of responsibilities which are determined by the contract.

This guide does not prescribe the arrangement of the documents in the **enquiry**.

NOTE As a comprehensive European environmental policy is still under preparation, this guide does not address the environmental implications of the **equipment**.

2 Normative references

This guide for procurement incorporates by dated or undated reference, provisions from other publications. These normative references are cited in the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this guide only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN ISO 9001, *Quality systems — Model for quality assurance in design, development, production, installation and servicing.*
(ISO 9001:1994)

EN ISO 9002, *Quality systems — Model for quality assurance in production, installation and servicing.*
(ISO 9002:1994)

IEC 50 (191), *International electrotechnical vocabulary — Chapter 191: Dependability and quality of service.*

IEC 1400-1, *Wind turbine generator systems — Part 1: Safety requirements.*

3 Definitions

For the purposes of this guide, the following definitions apply.

3.1 organizational terms

3.1.1

purchaser

recipient of a product and/or a service provided by a **supplier**

3.1.2

supplier

person or organization that provides a product and/or a service to the **purchaser**

3.1.3

specification

document stating technical requirements of the **purchaser**. It may form part of an **enquiry** issued by a **purchaser**

3.1.4

enquiry

invitation to **tender** issued by a **purchaser**. It will normally include a **specification** together with the necessary contractual and commercial conditions

3.1.5

tender

offer made by a **tenderer** in response to an **enquiry**

3.1.6

tenderer

person or organization submitting a **tender** for the **equipment** in response to the **enquiry**

3.1.7

site

place to which the **equipment** is to be delivered or where work is to be done by the **supplier**, together with so much of the area surrounding as the **supplier** may, with the consent of the **purchaser**, use for the purposes of the contract

NOTE Further definitions of useful organizational terms may be found in EN ISO 8402 (see annex A).

3.2 technical terms

technical terms applicable to wind turbines are defined in IEC 1400-1. The following definitions are specific to this guide