



SLOVENSKI STANDARD

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Guide for procurement of power station equipment - Part 4-4: Boiler auxiliaries - Fuel preparation equipment

Guide for procurement of power station equipment -- Part 4-4: Boiler auxiliaries - Fuel preparation equipment

Leitfaden für Beschaffung von Ausrüstungen für Kraftwerke -- Teil 4-4: Nebenanlagen - Brennstoffaufbereitungsanlagen

Guide pour l'acquisition d'équipements destinés aux centrales de production d'électricité -- Partie 4-4: Auxiliaires de chaudière - Systèmes de préparation du combustible

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This European Standard was approved by CEN and CENELEC on 3 July 2001.

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 45510-4-4:2002) has been prepared by Technical Committee CEN/CENELEC "Joint Task Force Power Engineering", the secretariat of which 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of an identical text or by endorsement, at the latest by February 2003, and conflicting national standards shall be withdrawn at the latest by February 2003.

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

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 control gear

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 desulphurisation (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**.*

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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

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1 Scope

This European Standard gives guidance on writing the technical **specification** for the procurement of **fuel preparation plant** for solid, liquid or gaseous fuels associated with steam generating plant, for use in electricity generating stations (power stations). This Guide for procurement is not applicable to **equipment** for use in the nuclear reactor plant area of nuclear power stations. Other possible applications of such **equipment** have not been considered in the preparation of this Guide.

This Guide covers:

- coal feeders;
- pulverizers/mills;
- classifiers;
- pipework for pf, oil and gas;
- oil pumps;
- oil heaters;
- oil filters;
- shut-off dampers;
- oil valves.

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 such as the fuel handling systems and the boiler;
- 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 (including amendments).

EN ISO 9001, Quality management systems - Requirements (ISO 9001:2000).

IEC 60050-191, International electrotechnical vocabulary - Chapter 191: Dependability and quality of service.

3 Terms and definitions

For the purposes of this Guide, the following terms and definitions apply.

3.1 Organisational terms

3.1.1

purchaser

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

3.1.2

supplier

person or organisation 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** [45510-4-4:2003](https://standards.iteh.ai/catalog/standards/sist/882f562f-fdf4-4ce6-bfc5-1a06eba5da05/sist-en-45510-4-4-2003)

3.1.6

tenderer

person or organisation 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 organisational terms can be found in EN ISO 9000 (see Bibliography).

3.2 Technical terms

3.2.1

fuel preparation plant

equipment comprising, for coal: **coal feeders**, **mills**, **pipework**, etc.; for oil: **oil pumps**, **oil heaters**, **pipework**, etc.; for gas: pressure reducing systems, **pipework**, etc., which together form a system to prepare and convey fuel to the burners at the conditions required for efficient combustion

3.2.2

coal feeder

device for supplying **mills** with a continuous flow of coal, capable of modulating flow rate according to the boiler demand

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3.2.3

mill/pulverizer

machine for reducing the particle size of the coal to that required for efficient combustion in a pulverized coal boiler. Two main types are used: tube ball **mills** (having a horizontal rotating cylinder with internal lifting bars and containing balls) and rotating table **mills** (having captive rollers or free balls)

3.2.4

classifier

device which regulates the fineness of coal leaving the **mills**

3.2.5

pipework

conduits through which pulverized fuel, oil or gas are conveyed to the burners. When conveying abrasive material parts or the whole may be lined with wear resisting material

3.2.6

oil pump

machine for conveying fuel-oil from storage tank to burner

3.2.7

oil heater

heat exchanger for increasing the temperature of fuel-oil in order to reduce its viscosity to that required for efficient atomization

3.2.8

shut-off damper/valve

device installed in a pipe to isolate the **mill** from the burners. Its effectiveness is defined in terms of the leakage flow when fully closed

3.2.9

oil filters

devices for removing solid particles in fuel-oil whose presence would block oil burner jets

3.2.10

turndown

ratio of **continuous maximum operating condition** to continuous minimum operating condition, for example a **turndown** ratio of 4:1 means that the **mill** should be capable of operating from 100 % down to 25 % of the flow rate at the **continuous maximum operating condition**

3.2.11

continuous maximum operating condition

maximum condition at which the **equipment** may be operated for a period not exceeding the specified **design life**. This is the operating condition under which the **performance** tests are usually conducted

3.3 General terms

3.3.1

equipment

*plant, component, system and/or associated service to be provided in response to the **enquiry***

3.3.2

conformity

fulfilment of specified requirements by a product, process or service

3.3.3

performance

obligations verified by specified tests

3.3.4

operating period

time between planned outages or maintenance periods during which the **equipment** is in operation and/or does not restrict operational requirements of the power station

3.3.5

life expectancy

time period over which the **equipment** might be expected to operate with planned maintenance but without replacement of a significant component, for example a **mill** gearbox is a significant component

3.3.6

design life

operating hours of the **equipment** on which design calculations are based

3.3.7

acceptability

compliance with criteria defined by the **purchaser** for assessing the suitability of **equipment**

3.3.8

equipment margins

allowance for design, fabrication or operating contingency defined in the **specification**. These are separate to those normally included by the **supplier** for his own purposes

3.3.9

proven equipment

equipment which may be demonstrated to be similar to that offered and has operated for a sufficient time to have demonstrated performance and availability

3.3.10

availability

as defined in IEC 60050-191

3.3.11

reliability

as defined in IEC 60050-191

3.3.12

maintainability

as defined in IEC 60050-191

4 Brief overall project description

4.1 Role and organisation of purchaser

The **enquiry** should define the **purchaser's** role in the project, including whether the **purchaser** will assume responsibility for the planning and technical coordination of the project, or whether other organisations will be