

Guide for procurement of power station equipment - Electrical equipment - Part 2-8: Power cables

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 45510-2-8:2004 sisaldab Euroopa standardi EN 45510-2-8:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 26.10.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 45510-2-8:2004 consists of the English text of the European standard EN 45510-2-8:2004.</p> <p>This document is endorsed on 26.10.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard gives guidance on writing the technical specification for the procurement of low voltage (LV) and medium voltage (MV) power cables 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.</p>	<p>Scope:</p> <p>This standard gives guidance on writing the technical specification for the procurement of low voltage (LV) and medium voltage (MV) power cables 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.</p>
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ICS 27.100; 29.060.20

English version

**Guide for procurement of power station equipment - Part 2-8:
Electrical equipment - Power cables**

Guide pour l'acquisition d'équipements destinés aux
centrales de production d'électricité - Partie 2-8:
Équipements électriques - Câbles de puissance

Leitfaden für die Beschaffung von Ausrüstungen für
Kraftwerke - Teil 2-8: Elektrische Ausrüstung -
Starkstromkabel

This European Standard was approved by CEN and CENELEC on 6 March 2001.

CEN and CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN or CENELEC member.

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 or CENELEC member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees, respectively, of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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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 the British Standards Institution.

The text of the draft was submitted to the formal vote and was approved by CEN and CENELEC as EN 45510-2-8 on 2001-03-06.

The following dates were fixed:

- *latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement* (dop) 2005-03-01
- *latest date by which the national standards conflicting with the EN have to be withdrawn* (dow) 2007-03-01

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 desulphurization (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 45510-1 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 parts of the "common clauses" are omitted, this is indicated by the symbol *****.

Where minor changes have been made to sentences in the "common clauses" these are marked by a vertical line in the left margin.

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.

1 Scope

*This standard gives guidance on writing the technical **specification** for the procurement of low voltage (LV) and medium voltage (MV) power cables 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 power cables only for voltages up to and including $U_m = 41,5$ kV. This Guide does not cover cables for public distribution systems, control and instrumentation systems or communications systems.

For guidance on the technical **specification** of cables, including their installation and termination, refer to EN 45510-2-6

*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

The following referenced documents are indispensable for the application 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.

European Standards

EN ISO 9001	Quality management systems - Requirements
EN 50265	Common test methods for cables under fire conditions. Test for resistance to vertical flame propagation for a single-insulated conductor or cable Part 1: Apparatus Part 2-1: Procedures - 1kW pre-mixed flame Part 2-2: Procedures - Diffusion flame
EN 50266	Common test methods for cables under fire conditions. Tests for vertical flame spread of vertically-mounted bunched wire or cables Part 1: Apparatus Part 2: Procedures

EN 50268 Common test methods for cables under fire conditions. Measurement of smoke density of cables burning under defined conditions
Part 1: Apparatus
Part 2: Procedure

International standards

IEC 60050 (191) International electrotechnical vocabulary
Chapter 191: Dependability and Quality of Services

IEC 60050 (461) International electrotechnical vocabulary
Chapter 461: Electric cables.

IEC 60183 Guide to the selection of high-voltage cables.

3 Definitions

For the purposes of this Guide, the following 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**.*

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 may be found in EN ISO 8402 (see Annex A).