Information technology - Data centre facilities and infrastructures -- Part 2-1: Building construction

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 50600-2-1:2014 sisaldab Euroopa standardi EN 50600-2-1:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 50600-2-1:2014 consists of the English text of the European standard EN 50600-2-1:2014.
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 21.03.2014.	Date of Availability of the European standard is 21.03.2014.
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.

ICS 35.020, 35.110, 91.140.50

EUROPEAN STANDARD

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English version

Information technology - Data centre facilities and infrastructures - Part 2-1: Building construction

Technologies de l'information - Installation et infrastructures des centres de traitement de données - Partie 2-1: Construction des bâtiments

Informationstechnik - Einrichtungen und Infrastrukturen von Rechenzentren - Teil 2-1: Gebäudekonstruktion

CENELEC

European Committee for Electrotechnical Standardization
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Contents

Figures

Tables

Foreword

This document (EN 50600-2-1:2014) has been prepared by CLC/TC 215 “Electrotechnical aspects of telecommunication equipment”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2015-01-06
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2015-01-06

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Introduction

The unrestricted access to internet-based information demanded by the information society has led to an exponential growth of both internet traffic and the volume of stored/retrieved data. Data centres are housing and supporting the information technology and network telecommunications equipment for data processing, data storage and data transport. They are required both by network operators (delivering those services to customer premises) and by enterprises within those customer premises.

Data centres need to provide modular, scalable and flexible facilities and infrastructures to easily accommodate the rapidly changing requirements of the market. In addition, energy consumption of data centres has become critical both from an environmental point of view (reduction of carbon footprint) and with respect to economical considerations (cost of energy) for the data centre operator.

The implementation of data centres varies in terms of:

a) purpose (enterprise, co-location, co-hosting, or network operator facilities);

b) security level;

c) physical size;

d) accommodation (mobile, temporary and permanent constructions).

The needs of data centres also vary in terms of availability of service, the provision of security and the objectives for energy efficiency. These needs and objectives influence the design of data centres in terms of building construction, power distribution, environmental control and physical security. Effective management and operational information is required to monitor achievement of the defined needs and objectives.

This series of European Standards specifies requirements and recommendations to support the various parties involved in the design, planning, procurement, integration, installation, operation and maintenance of facilities and infrastructures within data centres. These parties include:

1) owners, facility managers, ICT managers, project managers, main contractors;

2) consultants, architects, building designers and builders, system and installation designers;

3) facility and infrastructure integrators, suppliers of equipment;

4) installers, maintainers.

At the time of publication of this European Standard, EN 50600 series will comprise the following standards:

EN 50600-1: *Information technology — Data centre facilities and infrastructures — Part 1: General concepts*;

EN 50600-2-1: *Information technology — Data centre facilities and infrastructures — Part 2-1: Building construction*;

EN 50600-2-2: *Information technology — Data centre facilities and infrastructures — Part 2-2: Power distribution*;

EN 50600-2-3: *Information technology — Data centre facilities and infrastructures — Part 2-3: Environmental control*;

EN 50600-2-4: *Information technology — Data centre facilities and infrastructures — Part 2-4: Telecommunications cabling infrastructure*;

EN 50600-2-5: *Information technology — Data centre facilities and infrastructures — Part 2-5: Security systems*;

EN 50600-2-6: *Information technology — Data centre facilities and infrastructures — Part 2-6: Management and operational information*.

The inter-relationship of the standards within the EN 50600 series is shown in Figure 1.

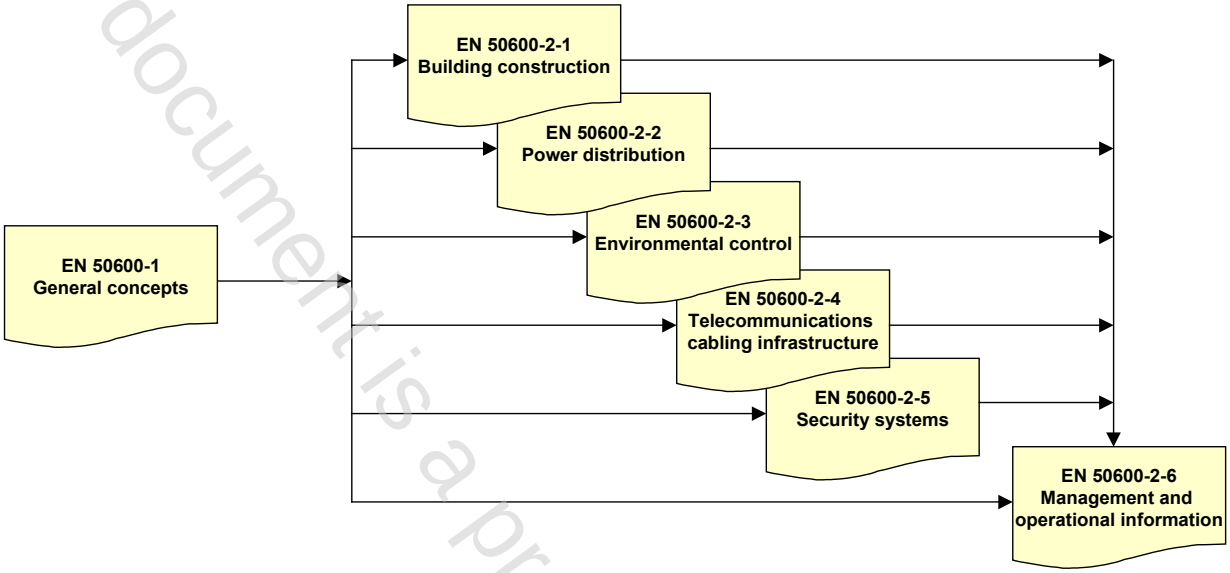

Figure 1 — Schematic relationship between the EN 50600 standards

EN 50600-2-X standards specify requirements and recommendations for particular facilities and infrastructures to support the relevant classification for “availability”, “physical security” and “energy efficiency enablement” selected from EN 50600-1.

This European Standard addresses the building design of data centres; it addresses security issues from a constructional point of view, whereas EN 50600-2-5 specifies the pertinent security system requirements of those facilities and infrastructures (in accordance with the requirements of EN 50600-1).

This European Standard is intended for use by and collaboration between architects, building designers and builders, system and installation designers.

This series of European Standards does not address the selection of information technology and network telecommunications equipment, software and associated configuration issues.

1 Scope

This European Standard addresses the construction of buildings and other structures which provide accommodation for data centres based upon the criteria and classification for “physical security” within EN 50600-1 in support of availability.

This European Standard specifies requirements and recommendations for the following:

a) location and site selection;

b) building construction;

c) building configuration;

d) fire protection;

e) quality construction measures.

Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this European Standard and are covered by other standards and regulations. However, information given in this European Standard may be of assistance in meeting these standards and regulations.

Conformance of data centres to the present document is covered in Clause 4.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12825:2001, *Raised access floors*

EN 15004-1, *Fixed firefighting systems — Gas extinguishing systems — Part 1: Design, installation and maintenance (ISO 14520-1:2006, modified)*

EN 50174-1, *Information technology — Cabling installation — Part 1: Installation specification and quality assurance*

EN 50174-3, *Information technology — Cabling installation — Part 3: Installation planning and practices outside buildings*

EN 50310, *Application of equipotential bonding and earthing in buildings with information technology equipment*

EN 50600-1:2012, *Information technology — Data centre facilities and infrastructures — Part 1: General concepts*

EN 50600-2-2, *Information technology — Data centre facilities and infrastructures — Part 2-2: Power distribution*

EN 50600-2-3 [1)], *Information technology — Data centre facilities and infrastructures — Part 2-3: Environmental control*

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1) Draft for formal vote under preparation.

EN 50600-2-4 [2)], *Information technology — Data centre facilities and infrastructures — Part 2-4: Telecommunications cabling infrastructure*

EN 50600-2-5 [3)], *Information technology — Data centre facilities and infrastructures — Part 2-5: Security systems*

EN 62305 (all parts), *Protection against lightning (IEC 62305, all parts)*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions in EN 50600-1 and the following apply.

3.1.1
access floor
system consisting of completely removable and interchangeable floor panels that are supported on adjustable pedestals connected by stringers to allow the area beneath the floor to be used by building services

3.1.2
access provider
operator of any facility that is used to convey telecommunications signals to and from a customer premises

3.1.3
building entrance facility
facility that provides all necessary mechanical and electrical services for the entry of telecommunications cables into a building and which may allow for transition from external to internal cable

[SOURCE: EN 50600-1:2012, 3.1.2 and EN 50173-1:2011, 3.1.17]

3.1.4
modular construction
method which uses standardized prefabricated construction elements with the possibility to add extra elements when more space is required

3.1.5
pathway
defined route for different media between identified points

Note 1 to entry: Examples for media are bus bars, cables, conduits, ducts, pipes.

3.1.6
plenum
compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system

3.1.7
room in room
construction method to have a physically independent chamber (walls and ceiling) in a new or existing building

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2) Circulated for CENELEC enquiry.

3) Draft for CENELEC enquiry under preparation.