



NSAI
Standards

Irish Standard
I.S. EN 50600-1:2012

Information technology - Data centre facilities and infrastructures -- Part 1: General concepts

I.S. EN 50600-1:2012

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i>	<i>This document is based on:</i> EN 50600-1:2012	<i>Published:</i> 30 November, 2012
This document was published under the authority of the NSAI and comes into effect on: 6 December, 2012		ICS number: 35.020 35.160
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeáin Náisiúnta na hÉireann		

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50600-1

November 2012

ICS 35.020; 35.160

English version

**Information technology -
Data centre facilities and infrastructures -
Part 1: General concepts**

Installation et infrastructures de centres de
traitement de données -
Partie 1: Concepts généraux

Informationstechnik -
Einrichtungen und Infrastrukturen von
Rechenzentren -
Teil 1: Allgemeine Konzepte

This European Standard was approved by CENELEC on 2012-10-22. 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-CENELEC Management Centre or to any 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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Contents

Foreword	4
Introduction	5
1 Scope and conformance	7
1.1 Scope	7
1.2 Conformance	7
2 Normative references	8
3 Terms, definitions and abbreviations	8
3.1 Terms and definitions	8
3.2 Abbreviations.....	12
4 Business risk analysis	12
4.1 General.....	12
4.2 Downtime cost analysis.....	13
4.3 Risk analysis	13
5 Data centre design overview	14
5.1 General.....	14
5.2 Spaces and facilities.....	15
6 Classification system for data centres	17
6.1 General.....	17
6.2 Availability	17
6.3 Physical security.....	18
6.4 Energy efficiency enablement	20
Annex A (informative) General design principles	22
A.1 Design process.....	22
A.2 Design principles for availability	24
A.3 Design of EMC concept.....	25
A.4 Design principles for physical security	25
A.5 Design principles for energy efficiency.....	26
Bibliography	27
Figures	
Figure 1 – Schematic relationship between EN 50600 series of standards.....	6
Figure 2 – Example of risk map.....	14
Figure 3 – Schematic diagram of premises containing a data centre	16
Figure A.1 – Design phases	22
Figure A.2 – Schematic diagram of data centre security zones.....	26

Tables

Table 1 – Availability Classes and example implementations.....	18
Table 2 – Protection Classes.....	19
Table 3 – Protection against environmental events	20

Foreword

This document (EN 50600-1:2012) 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) 2013-10-22
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2015-10-22

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

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) 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.

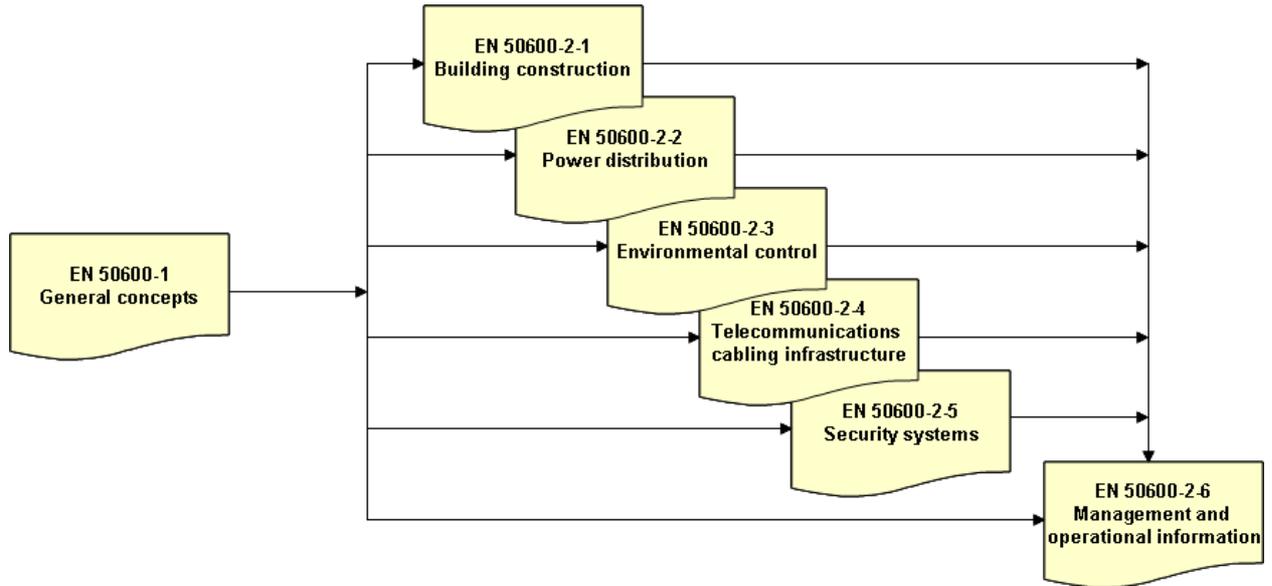


Figure 1 – Schematic relationship between EN 50600 series of standards

1 Scope and conformance

1.1 Scope

This European Standard:

- a) details the issues to be addressed in a business risk and operating cost analysis enabling application of an appropriate classification of the data centre;
- b) defines the common aspects of data centres including terminology, parameters and reference models (functional elements and their accommodation) addressing both the size and complexity of their intended purpose;
- c) describes general aspects of the facilities and infrastructures required to support effective operation of telecommunications within data centres;
- d) specifies a classification system, based upon the key criteria of “availability”, “security” and “energy-efficiency” over the planned lifetime of the data centre, for the provision of effective facilities and infrastructure;
- e) describes the general design principles for data centres upon which the requirements of the EN 50600 series are based including symbols, labels, coding in drawings, quality assurance and education;

The following topics are outside of the scope of this series of European Standards:

- 1) the selection of information technology and network telecommunications equipment, software and associated configuration issues are outside the scope of this European Standard;
- 2) safety and electromagnetic compatibility (EMC) requirements (covered by other standards and regulations. However, information given in this European Standard may be of assistance in meeting these standards and regulations).

1.2 Conformance

For a data centre design to conform to this European Standard:

- a) a business risk analysis according to Clause 4 shall be completed;
- b) an appropriate Availability Class in 6.2 shall be selected using a business risk analysis in Clause 4;
- c) an appropriate Protection Class in 6.3 shall be selected using a business risk analysis in Clause 4;
- d) an appropriate energy efficiency enablement level in 6.4 shall be selected;
- e) the general design principles in Annex A shall be applied.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-