Irish Standard
I.S. EN 50600-2-3:2014

Information technology - Data centre facilities and infrastructures - Part 2-3: Environmental control

I.S. EN 50600-2-3:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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Information technology - Data centre facilities and infrastructures - Part 2-3: Environmental control

Technologie de l'information - Installation et infrastructures des centres de traitement de données - Partie 2-3: Contrôle environnemental

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Foreword

This document (EN 50600-2-3:2014) 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)	2015-09-01
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2017-09-01

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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) 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, the 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.

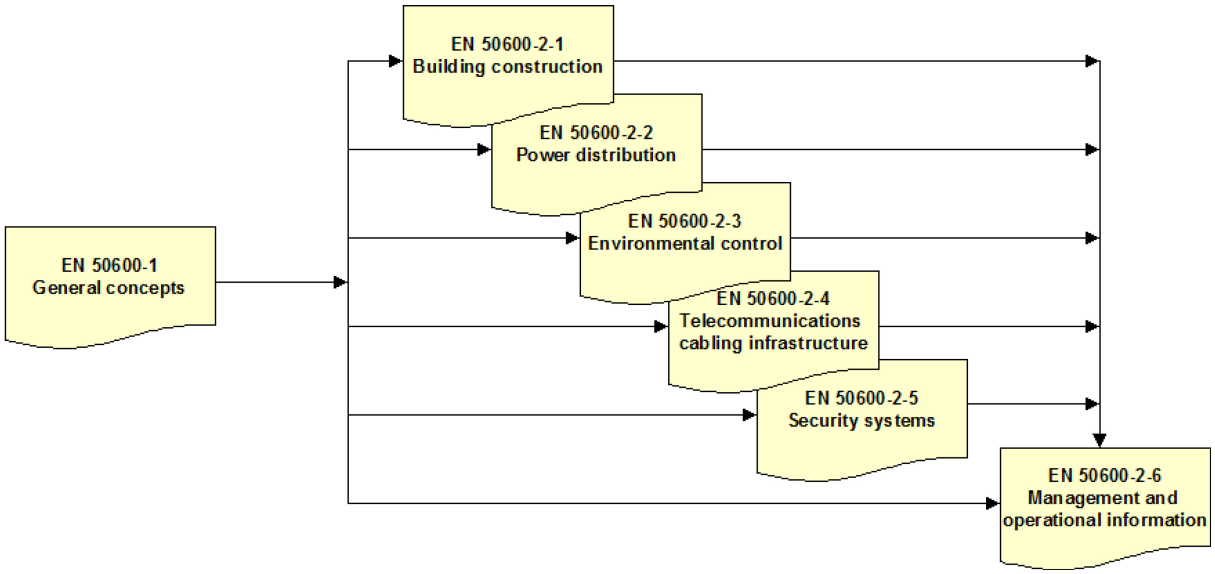

Figure 1 — Schematic relationship between the EN 50600 standards

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 environmental control facilities and infrastructure within data centres together with the interfaces for monitoring the performance of those facilities and infrastructures in line with EN 50600-2-6 (in accordance with the requirements of EN 50600-1).

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 environmental control within data centres based upon the criteria and classifications for “availability”, “security” and “energy efficiency enablement” within EN 50600-1.

This European Standard specifies requirements and recommendations for the following:

a) temperature control,

b) fluid movement control,

c) relative humidity control,

d) particulate control,

e) vibration,

f) floor layout and equipment locations,

g) energy saving practices,

h) physical security of environmental control systems.

For issues related to electromagnetic environment, see EN 50600-2-5.

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

EN 50600-2-5[1)], *Information technology — Data centre facilities and infrastructures — Part 2-5: Security systems*

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
adiabatic cooling
adiabatic cooling is a cooling system that is using the evaporative cooling principle to reduce the air temperature

3.1.2
absolute humidity
quantity of water vapour in a given volume of air, expressed by mass

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1) Circulated for CENELEC enquiry.