

საქართველოს სტანდარტი

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ეროვნული სააგენტო
თბილისი

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English Version

Information technology - Generic cabling systems - Part 5: Data centre spaces

Technologies de l'information - Systèmes de câblage générique - Partie 5: Espaces de centres de traitement de données

Informationstechnik - Anwendungsneutrale Kommunikationskabelanlagen - Teil 5: Rechenzentrumsbereiche

This European Standard was approved by CENELEC on 2018-03-19. 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.

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Contents	Page
European foreword.....	5
Introduction.....	6
1 Scope and conformance	9
1.1 Scope	9
1.2 Conformance.....	9
2 Normative references	10
3 Terms, definitions and abbreviations	10
3.1 Terms and definitions	10
3.2 Abbreviations	12
4 Structure of the generic cabling system in computer room spaces of data centres	12
4.1 General.....	12
4.2 Functional elements	12
4.3 Structure and hierarchy	13
4.4 Cabling subsystems	14
4.4.1 Data centre cabling subsystems.....	14
4.4.2 Associated cabling subsystems	15
4.5 Design objectives	16
4.5.1 General.....	16
4.5.2 Zone distribution cabling.....	16
4.5.3 Intermediate distribution cabling.....	16
4.5.4 Main distribution cabling	16
4.5.5 Network access cabling	16
4.5.6 Tie cabling	17
4.6 Accommodation of functional elements	18
4.6.1 General.....	18
4.6.2 Equipment Outlets	18
4.6.3 Distributors	18
4.6.4 Cables	18
4.6.5 Local Distribution Points	18
4.6.6 External Network Interface	18
4.7 Interfaces	18
4.7.1 Equipment interfaces and test interfaces	18
4.7.2 Channels and links	20
4.8 Dimensioning and configuration	20
4.8.1 Distributors	20
4.8.2 Cables	20
4.8.3 Connecting hardware	20

4.8.4	Cords.....	20
4.8.5	Equipment Outlets and Local Distribution Points	21
4.8.6	External Network Interface	21
5	Channel performance in computer room spaces of data centres.....	22
5.1	General.....	22
5.2	Environmental performance	23
5.3	Transmission performance.....	23
5.3.1	General.....	23
5.3.2	Balanced cabling	23
5.3.3	Optical fibre cabling	24
6	Reference implementations in computer room spaces of data centres.....	24
6.1	General.....	24
6.2	Balanced cabling	24
6.2.1	General.....	24
6.2.2	Zone distribution cabling.....	24
6.2.3	Intermediate distribution cabling.....	29
6.2.4	Main distribution cabling	30
6.2.5	Network access cabling.....	32
6.3	Optical fibre cabling	34
6.3.1	General.....	34
6.3.2	Component choice	35
6.3.3	Dimensions	35
7	Cable requirements in computer room spaces of data centres	35
7.1	General.....	35
7.2	Balanced cables of Category 5, 6, 6A, 7, 7A, 8.1 and 8.2.....	35
7.3	Optical fibre cables of Category OM3, OM4, OM5, OS1a and OS2.....	35
8	Connecting hardware requirements in computer room spaces of data centres	35
8.1	General requirements.....	35
8.2	Balanced connecting hardware	36
8.2.1	General requirements.....	36
8.2.2	Electrical, mechanical and environmental performance	36
8.3	Optical fibre connecting hardware	36
8.3.1	General requirements.....	36
8.3.2	Optical, mechanical and environmental performance.....	37
9	Requirements for cords and jumpers in computer room spaces of data centres.....	37
9.1	Jumpers	37
9.2	Balanced cords of Category 5, 6, 6A, 7, 7A, 8.1 and 8.2	37
9.2.1	General.....	37
9.2.2	Additional requirements for certain cords.....	37

9.3	Optical fibre cords of Category OM3, OM4, OM5, OS1a and OS2	37
	Annex A (normative) Link performance limits.....	38
A.1	General.....	38
A.2	Balanced cabling	39
A.3	Optical fibre cabling	39
	Annex B (normative) Usage of high density connecting hardware within optical fibre cabling.....	40
B.1	General.....	40
B.2	Examples of cabling configurations using high density connecting hardware	40
B.3	Channel performance.....	40
	Annex C (normative) Combination of balanced cabling links	43
C.1	General.....	43
C.2	Requirements.....	43
	Bibliography.....	44

Figures

Figure 1	— Schematic relationship between the EN 50173 series and other relevant standards	7
Figure 2	— Structure of generic cabling	13
Figure 3	— Hierarchical topology of generic cabling	14
Figure 4	— Examples of cabling implementation to improve reliability	17
Figure 5	— Example of accommodation of functional elements.....	18
Figure 6	— Test and equipment interfaces.....	19
Figure 7	— The External Network Interface	21
Figure 8	— Example of a channel	22
Figure 9	— Example of a system showing the location of cabling interfaces	23
Figure 10	— Zone distribution cabling models	27
Figure 11	— Intermediate distribution cabling model	29
Figure 12	— Main distribution cabling model.....	31
Figure 13	— Network access cabling model	33
Figure A.1	— Link options	38
Figure B.1	— Examples of high density connecting hardware within main distribution cabling.....	41
Figure B.2	— Examples of high density connecting hardware at the LDP and EO within zone distribution cabling	42
Figure C.1	— Examples of combination of different links	43

Tables

Table 1	— Contextual relationship between EN 50173 series and other standards relevant for information technology cabling systems	7
Table 2	— Zone distribution channel equations	28
Table 3	— Intermediate distribution channel equations	30
Table 4	— Main distribution channel equations.....	32
Table 5	— Network access cabling channel equations.....	34

European foreword

This document (EN 50173-5:2018) has been prepared by the Technical Committee CENELEC 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) 2019-03-19
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-03-19

This document supersedes EN 50173-5:2007 + A1:2010 + AC:2011 + A2:2012.

The European Standards EN 50173:1995 and EN 50173-1:2002 have been developed to enable the application-independent cabling to support ICT applications in office premises. Their basic principles, however, are applicable to other types of applications and in other types of premises.

TC 215 has decided to establish relevant European Standards which address the specific requirements of these premises. In order to point out the commonalities of these cabling design standards, these EN are published as individual parts of the series EN 50173, thus also acknowledging that standards users recognize the designation "EN 50173" as a synonym for generic cabling design.

At the time of publication of this European Standard, series EN 50173 comprises the following standards:

EN 50173-1	Information technology — Generic cabling systems — Part 1: General requirements
EN 50173-2	Information technology — Generic cabling systems — Part 2: Office spaces
EN 50173-3	Information technology — Generic cabling systems — Part 3: Industrial spaces
EN 50173-4	Information technology — Generic cabling systems — Part 4: Homes
EN 50173-5	Information technology — Generic cabling systems — Part 5: Data centre spaces
EN 50173-6	Information technology — Generic cabling systems — Part 6: Distributed building services

This edition of EN 50173-5:

- a) introduces new components 8.1 and 8.2 for balanced cabling to support new channel Classes I and II as well as optical fibre cabling (OM5) as defined in EN 50173-1:2018;
- b) clarifies that the cabling defined in this standard applies to computer rooms in data centres;
- c) aligns the document structure across the EN 50173 series and updates the document both technically and editorially.

Introduction

The importance of cabling infrastructure is similar to that of other fundamental utilities such as water and energy supply and interruptions to the services provided over that infrastructure can have a serious impact. A lack of design foresight, the use of inappropriate components, incorrect installation, poor administration or inadequate support can threaten quality of service and have commercial consequences for all types of users.

This standard specifies generic cabling within computer room spaces in data centre premises, or data centre spaces within other types of building.

Additionally those premises can include:

- office spaces for which generic cabling is specified in EN 50173-2;
- industrial spaces for which generic cabling is specified in EN 50173-3.

Generic cabling for distributed building services in data centre spaces is specified in EN 50173-6 which addresses all of the above premises and spaces within them.

Figure 1 and Table 1 show the schematic and contextual relationships between the standards produced by TC 215 for information technology cabling, namely:

- 1) this and other parts of the EN 50173 series;
- 2) installation (EN 50174 series);
- 3) bonding (EN 50310).

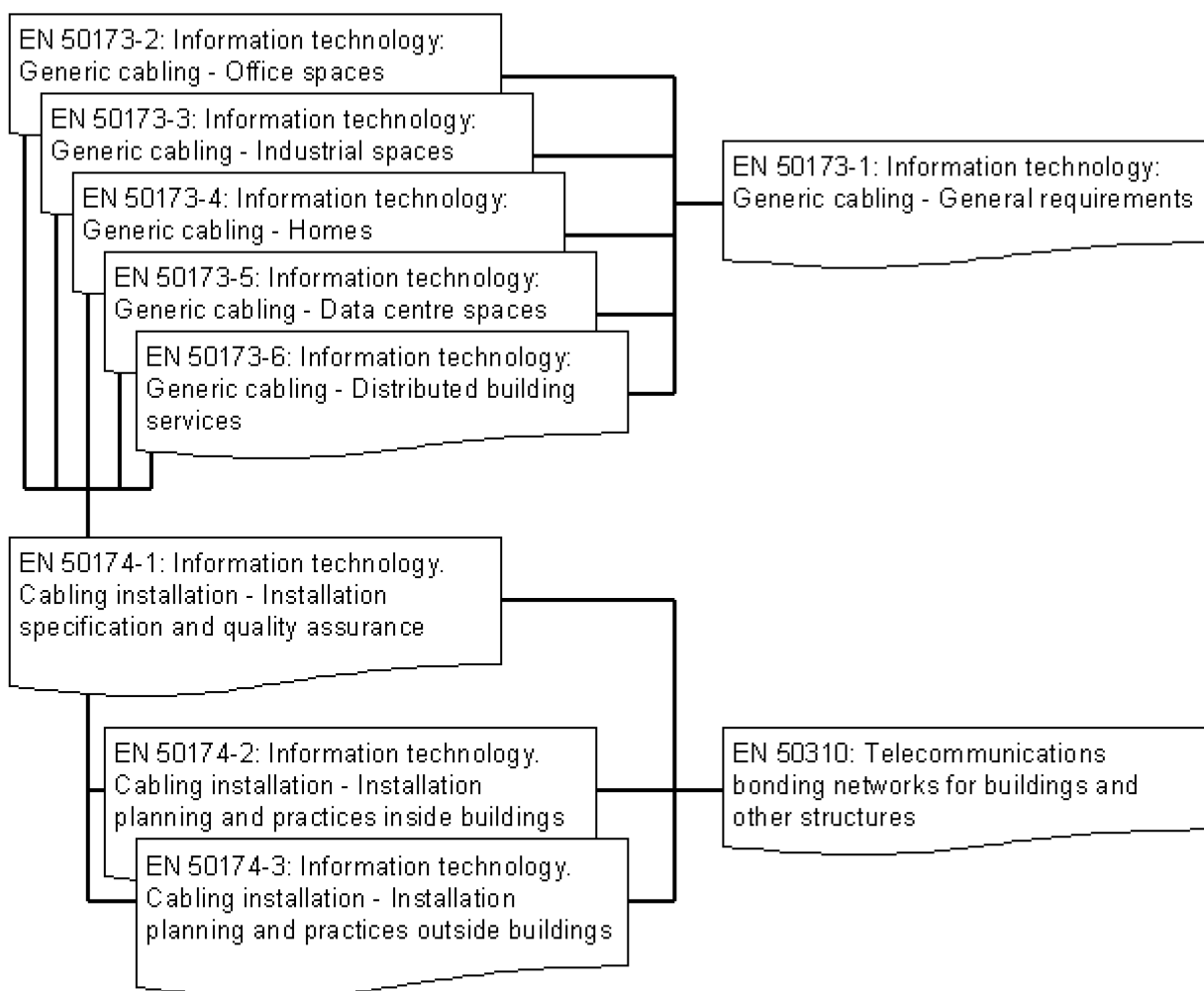


Figure 1 — Schematic relationship between the EN 50173 series and other relevant standards

Table 1 — Contextual relationship between EN 50173 series and other standards relevant for information technology cabling systems

Building design phase	Generic cabling design phase	Specification phase	Installation phase	Operation phase
EN 50310	EN 50173-2	EN 50174-1	EN 50174-2 EN 50174-3 EN 50310	EN 50174-1
	EN 50173-3	Planning phase		
	EN 50173-4 EN 50173-5 EN 50173-6 (these ENs reference general requirements of EN 50173-1)	EN 50174-2 EN 50174-3 EN 50310		

In addition, a number of Technical Reports have been developed to support or extend the application of these standards, including:

- CLC/TR 50173-99-1, *Cabling guidelines in support of 10 GBASE-T*;

- CLC/TR 50173-99-2, *Information technology — Implementation of BCT applications using cabling in accordance with EN 50173-4*;
- CLC/TR 50173-99-3, *Information technology — Generic cabling systems — Part 99-3: Home cabling infrastructures up to 50 m in length to support simultaneous and non simultaneous provision of applications*.

In addition, a number of cabling design standards have been developed using components of EN 50173-1 (e.g. EN 50098 series and EN 50700).

The generic cabling specified by this standard provides users with:

- an application independent system capable of supporting a wide range of applications in a range of installation and operating environments;
- a flexible scheme such that modifications are both easy and economical;
- a multi-vendor supply chain within an open market for cabling components.

In addition this standard provides:

- a) relevant industry professionals with guidance allowing the accommodation of cabling before specific requirements are known; i.e. in the initial planning either for construction or refurbishment and for further deployment as the requirements of areas are defined;
- b) industry and standardization bodies with a cabling system which supports current products and provides a basis for future product development and applications standardization.

Applications addressed in this standard include those developed by the Technical Committees of IEC (including the subcommittees of ISO/IEC JTC 1) and study groups of ITU-T within the densely connected environment of data centre spaces.

Physical layer requirements for the applications listed in EN 50173-1:2018, Annex F, have been analysed to determine their compatibility with the cabling performance specified in this standard and, together with statistics concerning premises geography from different countries and the models described in Clause 4, have been used to develop the requirements for cabling components and to stipulate their arrangement into cabling systems.

As a result, this standard:

- a) specifies a structure for generic cabling supporting a wide variety of applications including, but not restricted to, those in EN 50173-1:2018, Annex F;
- b) adopts balanced cabling channel and link Classes E_A, F, F_A, I and II specified in EN 50173-1;
- c) adopts optical fibre cabling channel and link requirements specified in EN 50173-1;
- d) adopts component requirements, specified in EN 50173-1, and specifies cabling implementations that ensures performance of links and of channels meeting the requirements of a specified group (e.g. Class) of applications.

Life expectancy of generic cabling systems can vary depending on environmental conditions, supported applications, aging of materials used in cables, and other factors such as access to pathways (campus pathways are more difficult to access than building pathways).

With appropriate choice of components, generic cabling systems meeting the requirements of this standard are expected to have a life expectancy of at least ten years.

This document should be read in conjunction with EN 50600-2-4 which describes other aspects of telecommunications cabling in the computer room and other spaces of data centres.