



SLOVENSKI STANDARD

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Informacijska tehnologija - Univerzalni sistemi pokabljenja - 2. del: Pisarne

Information technology - Generic cabling systems - Part 2: Office premises

Informationstechnik - Anwendungsneutrale Kommunikationskabelanlagen - Teil 2:
Bürogebäude

Technologies de l'information - Systemes de câblage générique - Partie 2: Locaux du
secteur tertiaire

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33.040.50	Vodi, zveze in tokokrogi	Lines, connections and circuits
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EUROPEAN STANDARD

EN 50173-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2007

ICS 33.040.50

Partially supersedes EN 50173-1:2002

English version

**Information technology -
Generic cabling systems -
Part 2: Office premises**

Technologies de l'information -
Systèmes de câblage générique -
Partie 2: Locaux du secteur tertiaire

Informationstechnik -
Anwendungsneutrale
Kommunikationskabelanlagen -
Teil 2: Bürogebäude

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This European Standard was approved by CENELEC on 2007-04-11. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 215, *Electrotechnical aspects of telecommunication equipment*.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50173-2 on 2007-04-11.

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) 2008-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-05-01

The previous editions of 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.

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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 premises |
| EN 50173-3 | Information technology – Generic cabling systems – Part 3: Industrial premises |
| EN 50173-4 | Information technology – Generic cabling systems – Part 4: Homes |
| EN 50173-5 | Information technology – Generic cabling systems – Part 5: Data centres |

This European Standard, EN 50173-2, together with EN 50173-1:2007 supersedes, EN 50173-1:2002. It is an editorial revision of EN 50173-1:2002 and contains those specifications of EN 50173-1:2002, which are relevant to generic cabling systems to be operated in office premises, referencing the general requirements of EN 50173-1:2007.

Contents

Introduction	5
1 Scope and conformance	8
1.1 Scope	8
1.2 Conformance	8
2 Normative references	9
3 Definitions and abbreviations	9
3.1 Definitions	9
3.2 Abbreviations	10
4 Structure of the generic cabling system in office premises	10
4.1 General	10
4.2 Functional elements	11
4.3 General structure and hierarchy	11
4.4 Cabling subsystems	12
4.5 Accommodation of functional elements	13
4.6 Interfaces	14
4.7 Dimensioning and configuring	14
5 Channel performance in office premises	18
5.1 General	18
5.2 Environmental performance	19
5.3 Transmission performance	19
6 Reference implementations in office premises	21
6.1 General	21
6.2 Balanced cabling	21
6.3 Optical fibre cabling	24
7 Cable requirements in office premises	26
7.1 General	26
7.2 Balanced cables	26
7.3 Optical fibre cables	26
8 Connecting hardware requirements in office premises	27
8.1 General requirements	27
8.2 Connecting hardware for balanced cabling	27
8.3 Connecting hardware for optical fibre cabling	27

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SIST EN 50173-2:2008
<https://standards.iteh.ai/catalog/standards/sist/0cc1fb12-f2ef-4b3f-a3c2-5750a3b04a06/sist-en-50173-2-2008>

9	Requirements for cords and jumpers in office premises	27
9.1	Jumpers.....	27
9.2	Balanced cords.....	28
9.3	Optical fibre cords.....	28
	Annex A (normative) Link performance limits	29
	Bibliography	30

Figures

Figure 1 - Schematic relationship between the EN 50173 series and other relevant standards.....	6
Figure 2 - Structure of generic cabling.....	11
Figure 3 - Hierarchical structure of generic cabling.....	12
Figure 4 - Structures for centralised generic cabling.....	12
Figure 5 - Accommodation of functional elements.....	13
Figure 6 - Test and equipment interfaces.....	14
Figure 7 - Example of a generic cabling system with combined BD and FD.....	15
Figure 8 - Connection of functional elements providing redundancy.....	16
Figure 9 - Example of a horizontal channel.....	18
Figure 10 - Example of a system showing the location of cabling interfaces.....	19
Figure 11 - Horizontal cabling models.....	23
Figure 12 - Combined optical fibre backbone/horizontal channels.....	25
Figure A.1 - Link options.....	29

Tables

Table 1 - Contextual relationship between EN 50173 series and other standards relevant for information technology cabling systems.....	7
Table 2 - Maximum channel lengths for reference implementations.....	15
Table 3 - Horizontal channel equations.....	24
Table 4 - Optical fibre channel equations.....	26

Introduction

The importance of the information technology cabling infrastructure is similar to that of other utilities such as heating, lighting and electricity supplies. As with other utilities, interruptions to service can have serious impact. Poor quality of service due to lack of planning, use of inappropriate components, incorrect installation, poor administration or inadequate support can threaten an organisation's effectiveness.

Historically, the cabling within premises comprised both application-specific and multipurpose networks. Standards within the EN 50173 series have enabled a controlled migration to generic cabling (with an associated reduction in the use of application-specific cabling) and supported the development of high data rate applications based upon defined cabling models.

This European Standard, EN 50173-2, has been prepared to reflect the demands of generic cabling within office premises and provides:

- a) users with an application independent generic cabling system and an open market for cabling components;
- b) users with a flexible cabling scheme such that modifications are both easy and economical;
- c) building professionals (for example, architects) with guidance allowing the accommodation of cabling before specific requirements are known; i.e., in the initial planning either for construction or refurbishment;
- d) industry and standardisation bodies with a cabling system which supports current products and provides a basis for future product development and applications standardisation.

This European Standard specifies multi-vendor cabling, and is related to:

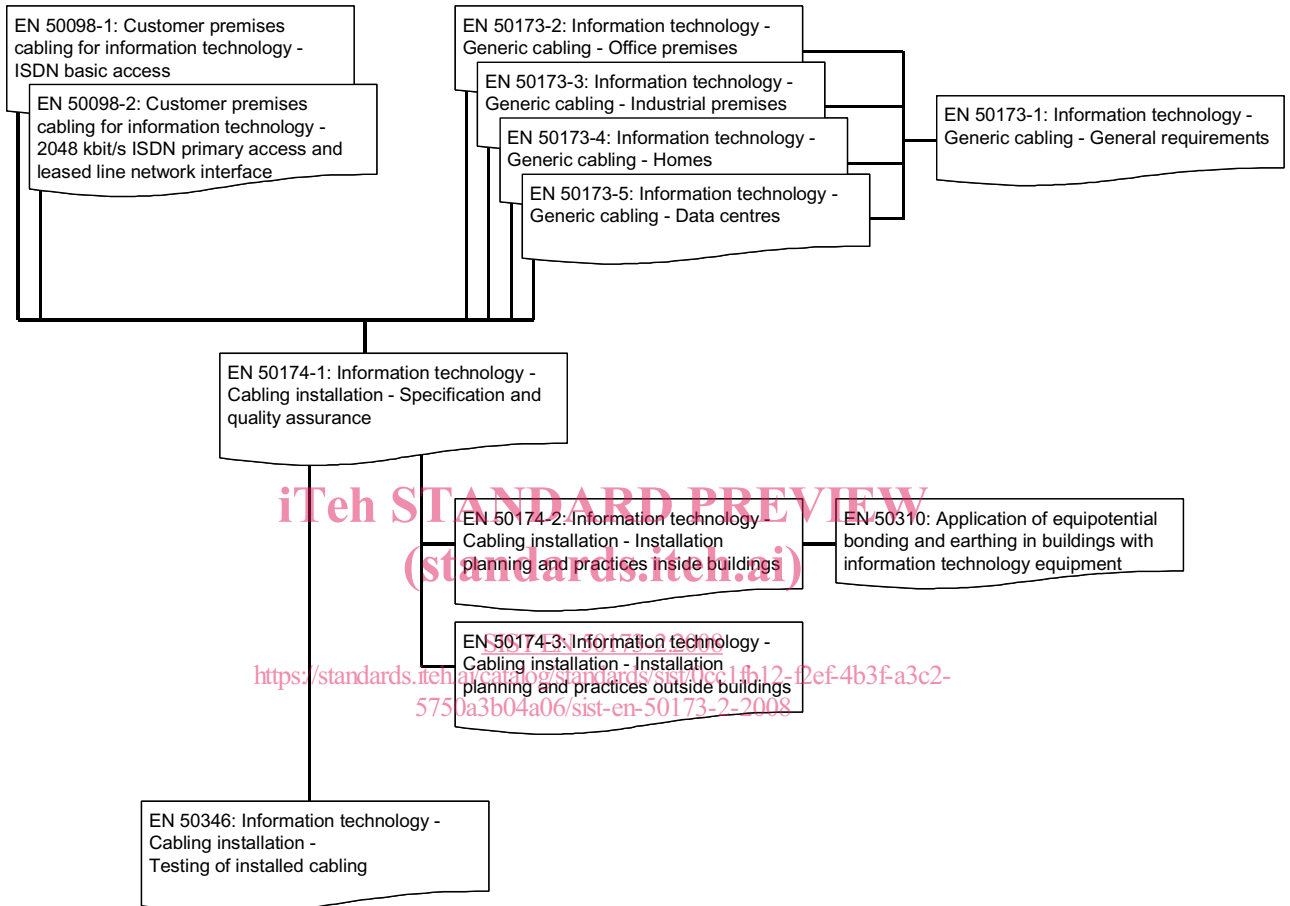
- the associated standard covering general requirements for generic cabling within premises (EN 50173-1);
<https://standards.iteh.ai/catalog/standards/sist/0cc1fb12-f2ef-4b3f-a3c2->
- standards for cabling components developed by Technical Committees of CENELEC and/or IEC;
- standards for the quality assurance and installation of information technology cabling (series EN 50174) and testing of installed cabling (EN 50346);
- applications developed by the technical bodies of IEC (including the subcommittees of ISO/IEC JTC 1) and study groups of ITU-T.

The applications listed in EN 50173-1:2007, Annex F, have been analysed to determine the requirements for a generic cabling system. These requirements, together with statistics concerning premises geography from different countries and the models described in Clause 6, have been used to develop the requirements for cabling components and to stipulate their arrangement into cabling systems. As a result, generic cabling defined within this European Standard is targeted at, but not limited to, office premises.

It is anticipated that the generic cabling system meeting the minimum requirements of this European Standard will have a life expectancy in excess of ten years.

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) application dependent cabling design (e.g. EN 50098 series);
- 3) installation (EN 50174 series);
- 4) testing of installed cabling (EN 50346);
- 5) equipotential bonding requirements (EN 50310).



NOTE For the purposes of the standards in the EN 50173 and EN 50174 series the term "information technology" includes ICT, BCT and CCCB applications.

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
<p>EN 50310</p> <p>5.2: Common bonding network (CBN) within a building</p> <p>6.3: AC distribution system and bonding of the protective conductor (TN-S)</p>	<p>EN 50173 series except EN 50173-4</p> <p>4: Structure</p> <p>5: Channel performance</p> <p>7: Cable requirements</p> <p>8: Connecting hardware requirements</p> <p>9: Requirements for cords and jumpers</p> <p>A: Link performance limits</p>	<p>EN 50174-1</p> <p>4 Requirements for installers</p> <p>5: Requirements for premises owners</p>		<p>EN 50174-1</p> <p>5: Requirements for premises owners</p>
		<p>Planning phase</p>		
	<p>and EN 50173-4</p> <p>4 and 5: Structure</p> <p>6: Channel performance</p> <p>8: Cable requirements</p> <p>9: Connecting hardware requirements</p> <p>10: Requirements for cords and jumpers</p> <p>A: Link performance limits</p>	<p>EN 50174-2</p> <p>5: Requirements for planning installations of information technology cabling</p> <p>6: Segregation of metallic information technology and mains power cabling</p> <p>7: Additional considerations</p>	<p>EN 50174-2</p> <p>4: Requirements for installers of information technology cabling</p> <p>6: Segregation of metallic information technology and mains power cabling</p>	
		<p>and EN 50174-3</p> <p>and (for equipotential bonding) EN 50310</p> <p>5.2: Common bonding network (CBN) within a building</p> <p>6.3: AC distribution system and bonding of the protective conductor (TN-S)</p>	<p>and EN 50174-3</p> <p>and (for equipotential bonding) EN 50310</p> <p>5.2: Common bonding network (CBN) within a building</p> <p>6.3: AC distribution system and bonding of the protective conductor (TN-S)</p> <p>and EN 50346</p> <p>4: General requirements</p> <p>5: Test parameters for balanced cabling</p> <p>6: Test parameters for optical fibre cabling</p>	

1 Scope and conformance

1.1 Scope

This European Standard specifies generic cabling that supports a wide range of communications services for use within office premises, or office areas within other types of premises, that comprise single or multiple buildings on a campus. The requirements of this standard may be applied to other premises that are not explicitly specified within other parts of the EN 50173 series of standards. It covers balanced cabling and optical fibre cabling.

This European Standard is based upon and references the requirements of EN 50173-1. This European Standard contains additional requirements that are appropriate to office premises in which the maximum distance over which communications services have to be distributed is 2 000 m. The principles of this European Standard may also be applied to installations that do not fall within this range.

In addition to the requirements of EN 50173-1, this European Standard specifies:

- a) an extended structure and configuration for generic cabling within office premises in support of a wide range of services including voice, data, text, image and video;
- b) implementation options;

Safety (electrical safety and protection, optical power, fire, etc.) 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 international Standard may be of assistance in meeting these standards and regulations.

1.2 Conformance

For a cabling system to conform to this European Standard:

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- a) the structure and configuration shall conform to the requirements of Clause 4;
- b) the interfaces to the cabling at the telecommunications outlet shall conform to the requirements of Clause 8 with respect to mating interfaces and performance;
- c) connecting hardware at other places in the cabling structure shall meet the performance requirements specified in Clause 8;
- d) the performance of channels shall conform to the requirements of Clause 5. This shall be achieved by one of the following:
 - a channel design and implementation ensuring that the prescribed channel performance Class of Clause 5 is met;
 - attachment of appropriate components to a link design meeting the prescribed performance Class of Annex A. Channel performance shall be assured where a channel is created by adding more than one cord to either end of a link meeting the requirements of Annex A;
 - using the reference implementations of Clause 6 and compatible cabling components conforming to the requirements of Clauses 7, 8 and 9, based upon a statistical approach of performance modelling.
- e) local regulations concerning safety shall be met.

In addition the following requirements of the EN 50174 series of standards shall be met:

- f) installation specification and quality planning to address:
 - the test parameters to be measured;
 - the sampling levels to be applied;
 - the treatment of channels or links which fail to meet requirements or for which test results lie within the relevant measurement accuracy;
- g) administration;
- h) installation.

Test methods to verify conformance with the channel and link requirements of Clause 5 and Annex A respectively are specified in EN 50346. Neither this standard nor EN 50174-1 specify the test and sampling levels to be adopted.

Specifications marked "ffs" (for further study) in EN 50173-1:2007 are preliminary and are not required for conformance to this European Standard.

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.

- EN 50173-1:2007, *Information technology - Generic cabling systems - Part 1: General requirements*
- EN 50174-1, *Information technology - Cabling installation - Part 1: Specification and quality assurance*
- EN 50174-2, *Information technology - Cabling installation - Part 2: Installation planning and practices inside buildings*
- EN 50174-3, *Information technology - Cabling installation - Part 3: Installation planning and practices outside buildings*
- EN 61076-3-106:2006, *Connectors for electronic equipment - Product requirements - Part 3-106: Rectangular connectors - Detail specification for protective housings for use with 8-way shielded and unshielded connectors for industrial environments incorporating the IEC 60603-7 series interface (IEC 61076-3-106:2006)*
- IEC 60874-19-1, *Connectors for optical fibres and cables - Part 19-1: Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b - Detail specification*

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this European Standard the following definitions apply in addition to those of EN 50173-1.

3.1.1

consolidation point

connection point in the horizontal cabling subsystem between a floor distributor and a telecommunications outlet

3.1.2

consolidation point cable

CP cable

cable connecting a consolidation point to a telecommunications outlet

3.1.3**consolidation point link****CP link**

transmission path between a consolidation point and the interface at the other end of the horizontal cable including the connecting hardware at each end

3.1.4**horizontal cable**

cable connecting the floor distributor to the telecommunications outlet(s) or consolidation point(s)

3.1.5**individual work area**

minimum building space which would be reserved for an occupant

3.1.6**telecommunications outlet**

fixed connecting device where the horizontal cabling terminates

NOTE The telecommunications outlet provides the interface to the work area cabling

3.1.7**terminal equipment**

equipment (e.g. telephone handset) that provides user access to an application at a telecommunications outlet

3.1.8**work area**

building space where the occupants interact with terminal equipment

3.1.9**work area cord**

cord connecting the telecommunications outlet to the terminal equipment

3.2 Abbreviations

For the purposes of this European Standard the following abbreviations apply in addition to those of EN 50173-1.

BEF	Building Entrance Facility
CP	Consolidation Point
MUTO	Multi User Telecommunications Outlet
OE EQP	Opto-electronic equipment
S	Splice
TE	Terminal Equipment
TO	Telecommunications Outlet

4 Structure of the generic cabling system in office premises**4.1 General**

This clause identifies the functional elements of generic cabling, describes how they are connected together to form subsystems and identifies the interfaces at which application-specific components are connected. Channels, created by connecting application-specific cabling components to the generic cabling, are used to support applications (see EN 50173-1:2007, Annex F).