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Irish Standard

I.S. EN 50174-2:2009&A1:2011&A2:2014

Information technology - Cabling installation -- Part 2: Installation planning and practices inside buildings

I.S. EN 50174-2:2009&A1:2011&A2:2014

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50174-2:2009/A2

October 2014

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English Version

**Information technology - Cabling installation - Part 2: Installation
planning and practices inside buildings**

Technologies de l'information - Installation de câblages -
Partie 2: Planification et pratiques d'installation à l'intérieur
des bâtiments

Informationstechnik - Installation von
Kommunikationsverkabelung - Teil 2: Installationsplanung
und Installationspraktiken in Gebäuden

This amendment A2 modifies the European Standard EN 50174-2:2009; it was approved by CENELEC on 2014-08-26. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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.

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword	3
Introduction.....	4
2 Normative references	6
3 Terms, definitions and abbreviations.....	6
3.1 Terms and definitions	6
4 Requirements for planning installations of information technology cabling	8
4.4 Pathway systems.....	9
4.6 Closures	9
4.8 Filtering and electrical isolation components and surge protective device	9
4.10 Planning for repair.....	10
5 Requirements for the installation of information technology cabling	10
5.4 Surge protective devices	11
6 Segregation of metallic information technology cabling and power supply cabling	11
8 Office (commercial) premises	12
9 Industrial premises.....	15
10 Homes.....	16
11 Data centres	16
12 Common infrastructures within multi-tenant buildings	20
12.1 General	20
12.2 Spaces in common areas	21
12.3 Pathways in common areas	21
12.4 Requirements for planning installations of information technology cabling	22
12.5 Requirements for the installers of information technology cabling	33
12.6 Segregation of metallic information technology cabling and power supply cabling	33
Annex A (informative) EMC and protection.....	33
A.3 Filtering and electrical isolation components and surge protective devices	33
Annex B (informative) Application of responsibilities	33
Bibliography.....	36

Foreword

This document (EN 50174-2:2009/A2:2014) 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) 2015-08-26
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-08-26

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

This amendment covers:

- a new Clause 12 on common pathways and spaces within multi-tenant buildings;
- a modified treatment of A.3 to ensure to that it addresses the planning and installation of electrical isolation components internal to buildings (EN 50174-3 will include an Annex with the same topic for external to buildings);
- some technical and editorial changes to Clauses 3, 4, 5, 8 and 11.

Foreword

This amendment to the European Standard EN 50174-2:2009 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 amendment A1 to EN 50174-2:2009 on 2011-01-03.

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The following dates were fixed:

- | | | |
|---|-------|------------|
| – latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2012-01-03 |
| – latest date by which the national standards conflicting with the amendment have to be withdrawn | (dow) | 2014-01-03 |

This amendment introduces:

- a new Clause 10 with specific requirements for installation of cabling in homes;
- a new Clause 11 with specific requirements for installation of cabling in data centres;
- detailed requirements and recommendations for installation of cabling in office (including commercial) (see Clause 8) premises and in industrial premises (see Clause 9);
- some technical and editorial modifications to the other clauses.

Text of A1 to EN 50174-2:2009

Introduction

Replace Table 1 with:

Table 1 – Contextual relationship between EN 50174 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 series except EN 50173-4	EN 50174-1		EN 50174-1
6. Bonding networks	4: Structure 5: Channel performance 7: Cable requirements 8: Connecting hardware requirements 9: Requirements for cords and jumpers A: Link performance limits	4: Requirements for specifying installations of information technology cabling 5: Requirements for installers of information technology cabling		4: Requirements for specifying installations of information technology cabling
	and EN 50173-4	Planning phase		
	4 and 5: Structure 6: Channel performance 8: Cable requirements 9: Connecting hardware requirements 10: Requirements for cords and jumpers A: Link performance limits	EN 50174-2 4: Requirements for planning installations of information technology cabling 6: Segregation of metallic information technology cabling and power supply cabling 7: Electricity distribution systems and lightning protection	EN 50174-2 5: Requirements for the installation of information technology cabling 6: Segregation of metallic information technology cabling and power supply cabling 8: Office (commercial) premises 9: Industrial premises 10: Homes 11: Data centres	
		and EN 50174-3	and EN 50174-3	
		and (for equipotential bonding) EN 50310	and (for equipotential bonding) EN 50310	
			and EN 50346 4: General requirements 5: Test parameters for balanced cabling 6: Test parameters for optical fibre cabling	

EUROPEAN STANDARD
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EUROPÄISCHE NORM

EN 50174-2

May 2009

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English version

**Information technology -
Cabling installation -
Part 2: Installation planning and practices inside buildings**

Technologies de l'information -
Installation de câblages -
Partie 2: Planification et pratiques
d'installation à l'intérieur des bâtiments

Informationstechnik -
Installation
von Kommunikationsverkabelung -
Teil 2: Installationsplanung
und Installationspraktiken in Gebäuden

This European Standard was approved by CENELEC on 2009-05-01. 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: Avenue Marnix 17, B - 1000 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 50174-2 on 2009-05-01.

This European Standard supersedes EN 50174-2:2000.

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) | 2010-05-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2012-05-01 |

EN 50174 comprises three parts. All three parts support the specification, implementation and operation of information technology cabling. There are specific requirements for cabling systems that are in accordance with the design requirements of the EN 50173 series. However, the three parts also apply to cabling systems of any design including those in accordance with standards such as EN 50098-1 or EN 50098-2.

This part, EN 50174-2, is concerned with the planning and installation of information technology cabling using metallic cabling and optical fibre cabling inside buildings. It provides guidance as to the responsibilities of those involved and is intended to be referenced in relevant contracts.

Additional clauses containing normative requirements for specific types of premises will be added as amendments, or as revisions, to this standard. At the time of publication of this European Standard, the following clauses are planned:

- homes;
- data centres;
- operator buildings.

It does not cover those aspects of installation associated with the transmission of signals in free space between transmitters, receivers or their associated antenna systems (e.g. wireless, radio, microwave or satellite).

This document contains two informative annexes:

- Annex A, providing information on EMC and protection;
 - Annex B, containing a minimum set of responsibilities applicable to installers and enabling national-specific amendment to define other responsibilities.
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Contents

Introduction.....	6
1 Scope and conformance.....	9
1.1 Scope	9
1.2 Conformance.....	9
2 Normative references.....	10
3 Terms, definitions and abbreviations	12
3.1 Terms and definitions	12
3.2 Abbreviations	14
4 Requirements for planning installations of information technology cabling	15
4.1 Safety	15
4.2 Documentation	16
4.3 Pathways.....	16
4.4 Pathway systems	17
4.5 Cable management systems	18
4.6 Closures	20
4.7 Cabling	20
5 Requirements for the installation of information technology cabling.....	21
5.1 Safety	21
5.2 Documentation	22
5.3 Installation practice	22
5.4 Surge protective devices.....	28
5.5 Labelling.....	28
5.6 Testing.....	28
5.7 Contractual acceptance	29
6 Segregation of metallic information technology cabling and mains power cabling.....	29
6.1 General.....	29
6.2 Requirements.....	29
6.3 Recommendations	36
7 Electricity distribution systems and lightning protection	37
7.1 Electricity distribution systems	37
7.2 Protection against lightning and induced overvoltages.....	38
8 Office (commercial) premises	39
8.1 General.....	39
8.2 Office (commercial) premises cabling design overview.....	39
8.3 Requirements for planning installations of information technology cabling	40
8.4 Requirements for installers of information technology cabling	40
8.5 Segregation of metallic information technology cabling and mains power cabling	40

9 Industrial premises	40
9.1 General.....	40
9.2 Industrial premises cabling design overview	40
9.3 Requirements for planning installations of information technology cabling	41
9.4 Requirements for installers of information technology cabling	42
9.5 Segregation of metallic information technology cabling and mains power cabling	43
Annex A (informative) EMC and protection.....	44
A.1 Coupling mechanisms and countermeasures.....	44
A.2 The EMC concept	47
A.3 Filtering and electrical isolation components and surge protective devices	51
Annex B (informative) Application of responsibilities	57
Bibliography.....	60
Figures	
Figure 1 – Schematic relationship between the EN 50174 series and other relevant standards	7
Figure 2 – Cable arrangement in a metallic section.....	20
Figure 3 – Continuity of metallic cable management systems	24
Figure 4 – Interruption of metallic cable management systems at fire barriers	24
Figure 5 – Flowchart for cable separation calculation.....	32
Figure 6 – Separation of mains power and information technology cables without dividers	33
Figure 7 – Separation of mains power and information technology cables with dividers	34
Figure 8 – Separation of cables in pathway systems.....	35
Figure 9 – Structure of generic cabling in industrial premises	41
Figure 10 – Configuration of apparatus-based functional elements within industrial premises	41
Figure A.1 – Screened cables reduce capacitive coupling	44
Figure A.2 – Electrical field to cable, capacitive coupling example.....	46
Figure A.3 – Magnetic field to loop, inductive coupling example	46
Figure A.4 – Magnetic field.....	47
Figure A.5 – Earthing arrangement.....	47
Figure A.6 – Earthing and bonding of filters	52
Figure A.7 – Mounting of filters	53
Figure A.8 – Installation of power filter	53
Figure A.9 – Installation guidelines for transformers.....	55
Figure A.10 – Installation guidelines for optocouplers	55
Figure A.11 – Short connections of surge protective devices	56

Tables

Table 1 – Contextual relationship between EN 50174 series and other standards relevant for information technology cabling systems	8
Table 2 – Stacking height for typical distances L	18
Table 3 – Classification of information technology cables	30
Table 4 – Minimum separation S	31
Table 5 – Power cabling factor	31
Table 6 – Separation requirements between metallic cabling and specific EMI sources	36
Table A.1 – EMC checklist	48
Table A.2 – Actions resulting from the answers of Table A.1	49
Table B.1 – Responsibilities template	58
Table B.2 – Example of completed responsibilities	59

Introduction

The importance of services delivered by information technology cabling infrastructure is similar to that of utilities such as heating, lighting and electricity supplies. As with those utilities, interruptions to service can have a 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.

There are four phases in the successful implementation of information technology cabling. These are:

- a) design;
- b) specification – the detailed requirement for the cabling, including the planning of its accommodation and associated building services addressing specific environments (e.g. electromagnetic) together with the quality assurance requirements to be applied;
- c) installation – in accordance with the requirements of the specification;
- d) operation – the management of connectivity and the maintenance of transmission performance during the life of the cabling.

This European Standard is in three parts and addresses the specification, installation and operational aspects. The EN 50173 series and other application standards cover design issues.

EN 50174-1 is used during the specification phase. It addresses the:

- installation specification, quality assurance documentation and procedures;
- documentation and administration;
- operation and maintenance.

This part, EN 50174-2, and EN 50174-3 are intended to be used by the personnel directly involved in the planning aspects (of the specification phase) and installation phase. EN 50174-2 is applicable inside buildings and EN 50174-3 is applicable outside buildings.

This European Standard is also relevant to:

- architects, building designers and builders;
- main contractors;
- designers, suppliers, installers, inspectors (auditors), maintainers and owners of information technology cabling;
- public network providers and local service providers;
- end users.

This part, EN 50174-2, contains requirements and recommendations relating to the installation planning and practices by defining:

- i) planning strategy (road map) and guidance depending on the application, electromagnetic environment, building infrastructure and facilities, etc.;
- ii) planning and installation requirements for metallic and optical fibre information technology cabling depending on the application, electromagnetic environment, building infrastructure and facilities, etc.;
- iii) the practices and procedures to be adopted to ensure that the cabling is installed in accordance with the specification.

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

- 1) this and other parts of the EN 50174 series;
- 2) generic cabling design (EN 50173 series);
- 3) application dependent cabling design (e.g. EN 50098 series);
- 4) testing of installed cabling (EN 50346);
- 5) equipotential bonding requirements (EN 50310).

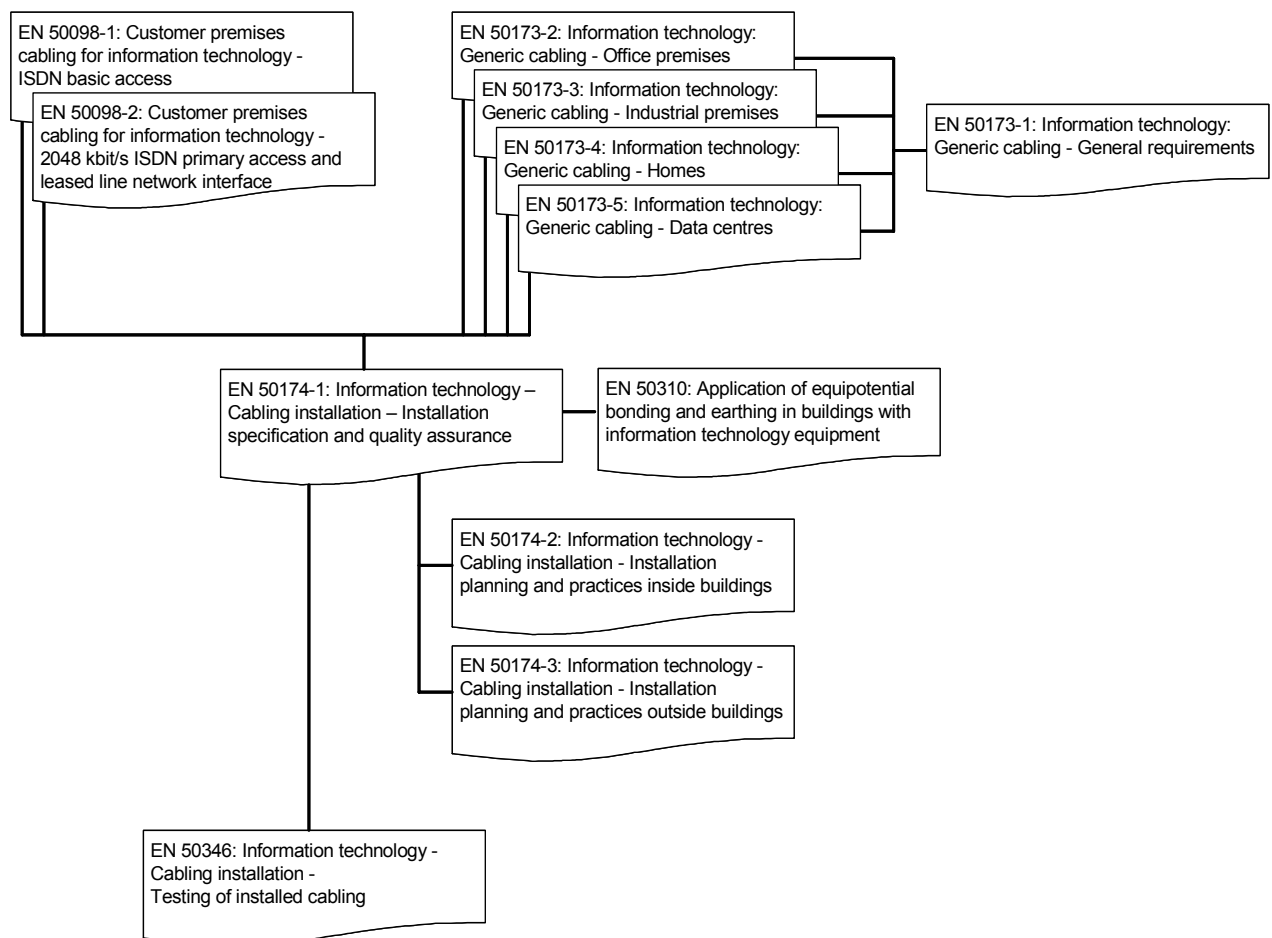


Figure 1 – Schematic relationship between the EN 50174 series and other relevant standards

Table 1 – Contextual relationship between EN 50174 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 5.2: Common bonding network (CBN) within a building 6.3: AC distribution system and bonding of the protective conductor (TN-S)	EN 50173 series except EN 50173-4 4: Structure 5: Channel performance 7: Cable requirements 8: Connecting hardware requirements 9: Requirements for cords and jumpers A: Link performance limits and EN 50173-4 4 and 5: Structure 6: Channel performance 8: Cable requirements 9: Connecting hardware requirements 10: Requirements for cords and jumpers A: Link performance limits	EN 50174-1 4: Requirements for specifying installations of information technology cabling 5: Requirements for installers of information technology cabling		EN 50174-1 4: Requirements for specifying installations of information technology cabling
		Planning phase		
		EN 50174-2 4: Requirements for planning installations of information technology cabling 6: Segregation of metallic information technology cabling and mains power cabling 7: Electricity distribution systems and lightning protection and EN 50174-3 and (for equipotential bonding) EN 50310 5.2: Common bonding network (CBN) within a building 6.3: AC distribution system and bonding of the protective conductor (TN-S)		
			EN 50174-2 5: Requirements for the installation of information technology cabling 6: Segregation of metallic information technology cabling and mains power cabling and EN 50174-3 and (for equipotential bonding) EN 50310 5.2: Common bonding network (CBN) within a building 6.3: AC distribution system and bonding of the protective conductor (TN-S) and EN 50346 4: General requirements 5: Test parameters for balanced cabling 6: Test parameters for optical fibre cabling	

1 Scope and conformance

1.1 Scope

This European Standard specifies requirements for the following aspects of information technology cabling:

- a) planning;
- b) installation practice.

This European Standard is applicable to all types of information technology cabling inside buildings (and may be applied to cabling that is defined as part of the building) including generic cabling systems designed in accordance with the EN 50173 series. The requirements of Clauses 4, 5 and 6 of this standard are premises-independent unless amended by the requirements of premises-specific clauses.

This European Standard:

- 1) details the considerations for satisfactory installation and operation of information technology cabling;
- 2) excludes specific requirements applicable to other cabling systems (e.g. mains power cabling); however, it takes account of the effects other cabling systems may have on the installation of information technology cabling (and vice versa) and gives general advice;
- 3) excludes those aspects of installation associated with the transmission of signals in free space between transmitters, receivers or their associated antenna systems (e.g. wireless, radio, microwave or satellite).

This European Standard is intended for application within commercial and residential premises.

This standard is applicable to certain hazardous environments but does not exclude additional requirements which are applicable in particular circumstances, defined by e.g. electricity supply and electrified railways.

1.2 Conformance

For a cabling installation to conform to this European Standard:

- a) the planning of the installation shall meet the requirements of Clause 4;
- b) the installation practices shall meet the requirements of Clause 5;
- c) the additional requirements of the applicable premises-specific clause shall be met;
- d) the equipotential bonding system within the premises shall be in accordance with EN 50310;
- e) where a lightning protection system is required, it shall conform to the "integrated lightning protection system" according to EN 62305-4;
- f) other lightning protection systems, including the "isolated lightning protection system" according to EN 62305-3 are allowed provided that specific restrictions are applied both to the implementation of the information technology cabling and the requirements of EN 50310 as agreed between the planners of the lightning protection system and the information technology cabling;
- g) local regulations, including safety, shall be met.

The responsibilities for specific elements of conformance may be made by national-specific amendment of Annex B.

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