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I.S. EN 50174-1:2009&A1:2011&A2:2014

Information technology - Cabling installation -- Part 1: Installation specification and quality assurance

I.S. EN 50174-1:2009&A1:2011&A2:2014

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

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English Version

Information technology - Cabling installation - Part 1: Installation specification and quality assurance

Technologies de l'information - Installation de câblages - Partie 1: Spécification de l'installation et assurance de la qualité

Informationstechnik - Installation von Kommunikationsverkabelung - Teil 1: Installationsspezifikation und Qualitätssicherung

This amendment A2 modifies the European Standard EN 50174-1:2009; it was approved by CENELEC on 2014-08-18. 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.

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

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

Foreword

This document (EN 50174-1:2009/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)	2015-08-18
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2017-08-18

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

– some technical and editorial changes to the Introduction, Clauses 3 and 4.

– a new Annex F.

EUROPEAN STANDARD

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Informationstechnik - Installation von Kommunikationsverkabelung - Teil 1: Installationsspezifikation und Qualitätssicherung

This amendment A1 modifies the European Standard EN 50174-1:2009; it was approved by CENELEC on 2011-01-01. 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.

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CENELEC

European Committee for Electrotechnical Standardization
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Foreword

This amendment to the European Standard EN 50174-1:2009 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 50174-1:2009 on 2011-01-01.

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

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)	2012-01-01
– latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2014-01-01

This amendment comes with

– a new normative Annex E on sampling plans and marginal results;

– simplified administration requirements (see 4.5.2), simplified complexity installation and operational levels (see 6.2) and simplified minimum requirements for technical specifications and quality plans (see Annex A);

– some technical and editorial changes to Clauses 4 and 5.

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NORME EUROPÉENNE

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Informationstechnik - Installation von Kommunikationsverkabelung - Teil 1: Installationsspezifikation und Qualitätssicherung

CENELEC

European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 50174-1:2009 E

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 50174-1 on 2009-05-01.

This European Standard supersedes EN 50174-1:2000.

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 50174-1, is concerned with specification, quality assurance, documentation and administration of information technology cabling to be installed, together with its subsequent operation and maintenance. It sets out the responsibilities of information technology cabling installers and premises owners or appointed representatives separately, and is intended to be referenced in relevant contracts.

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).

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Contents

Introduction **5**

1 Scope and conformance **8**

1.1 Scope 8

1.2 Conformance 8

2 Normative references **8**

3 Terms, definitions and abbreviations **9**

3.1 Terms and definitions 9

3.2 Abbreviations 12

4 Requirements for specifying installations of information technology cabling **12**

4.1 Documentation 12

4.2 Planning 18

4.3 Products and processes 22

4.4 External network service provision 23

4.5 Operating procedures 24

4.6 Maintenance 27

5 Requirements for installers of information technology cabling **28**

5.1 Documentation and administration 28

5.2 Products and processes 29

5.3 Power supplies 30

5.4 Surveys 30

6 Installation complexity **31**

6.1 Requirements 31

6.2 Recommendations 31

Annex A (normative) **Minimum requirements for technical specifications and quality plans** **32**

A.1 General 32

A.2 Technical specification 32

A.3 Quality plan 32

Annex B (normative) **Polarity maintenance: Connecting hardware for multiple optical fibres** **33**

B.1 General 33

B.2 Duplex connecting hardware interfaces 33

B.3 Array connecting hardware interfaces 37

Annex C (informative) **Terminating balanced cables on terminating blocks in distributors** **42**

C.1 General 42

C.2 The use of the same type of connector at each end of a cable 42

C.3 The use of a different type of connector at each end of a cable 42

C.4 Relation between the pins of connectors according to EN 60603-7 and the tags of a terminating block 42

Annex D (informative) **Compatibility between transmission systems (balanced and unbalanced) sharing the same cable sheath within information technology cabling 43**

D.1 Introduction 43

D.2 Recommendations concerning cable sharing 43

D.3 Factors to be taken into account to ensure satisfactory performance 44

D.4 Guidelines for reducing interference between transmission systems within the same cable sheath 45

D.5 Cabling qualification 45

D.6 Particular installation requirements and recommendations 45

D.7 Cable management 46

D.8 Regulatory aspects 46

Bibliography 47

Figures

Figure 1 – Schematic relationship between the EN 50174 series and other relevant standards 6

Figure B.1 – Duplex connecting hardware plug 34

Figure B.2 – Duplex connecting adapter 34

Figure B.3 – Duplex patch cord 34

Figure B.4 – Views of crossover patch cords 35

Figure B.5 – Optical fibre sequences and adapter orientation in patch panel for the Symmetrical Position Method 36

Figure B.6 – Optical fibre sequences and adapter orientation in patch panel for the Reverse-Pair Position Method 36

Figure B.7 – Array connector cable or patch cord (key-up to key-up) 38

Figure B.8 – Array adapter with aligned keyways 38

Figure B.9 – Transition assembly 39

Figure B.10 – Connectivity method for duplex cabling 40

Figure B.11 – Connectivity method for array cabling 41

Tables

Table 1 – Contextual relationship between EN 50174 series and other standards relevant for information technology cabling systems 7

Table 2 – Minimum requirements of administration systems 25

Table 3 – Minimum requirements of operational administration systems 26

Table 4 – Level of installation complexity 31

Table 5 – Level of operational complexity 31

Table A.1 – Minimum requirements for technical specification 32

Table A.2 – Minimum requirements for quality plan 32

Table B.1 – Optical fibre colour code scheme of EN 60794-2 33

Table C.1 – Examples of the relations between the EN 60603-7 series pins and the tags of the terminating block 42

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.

The requirements and recommendations of Clause 4 are primarily for owners of premises housing information technology systems. The owners may delegate selected responsibilities to designers, specifiers, operators and maintainers of installed information technology cabling.

The requirements and recommendations of Clause 5 are primarily for the installers of information technology cabling.

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).

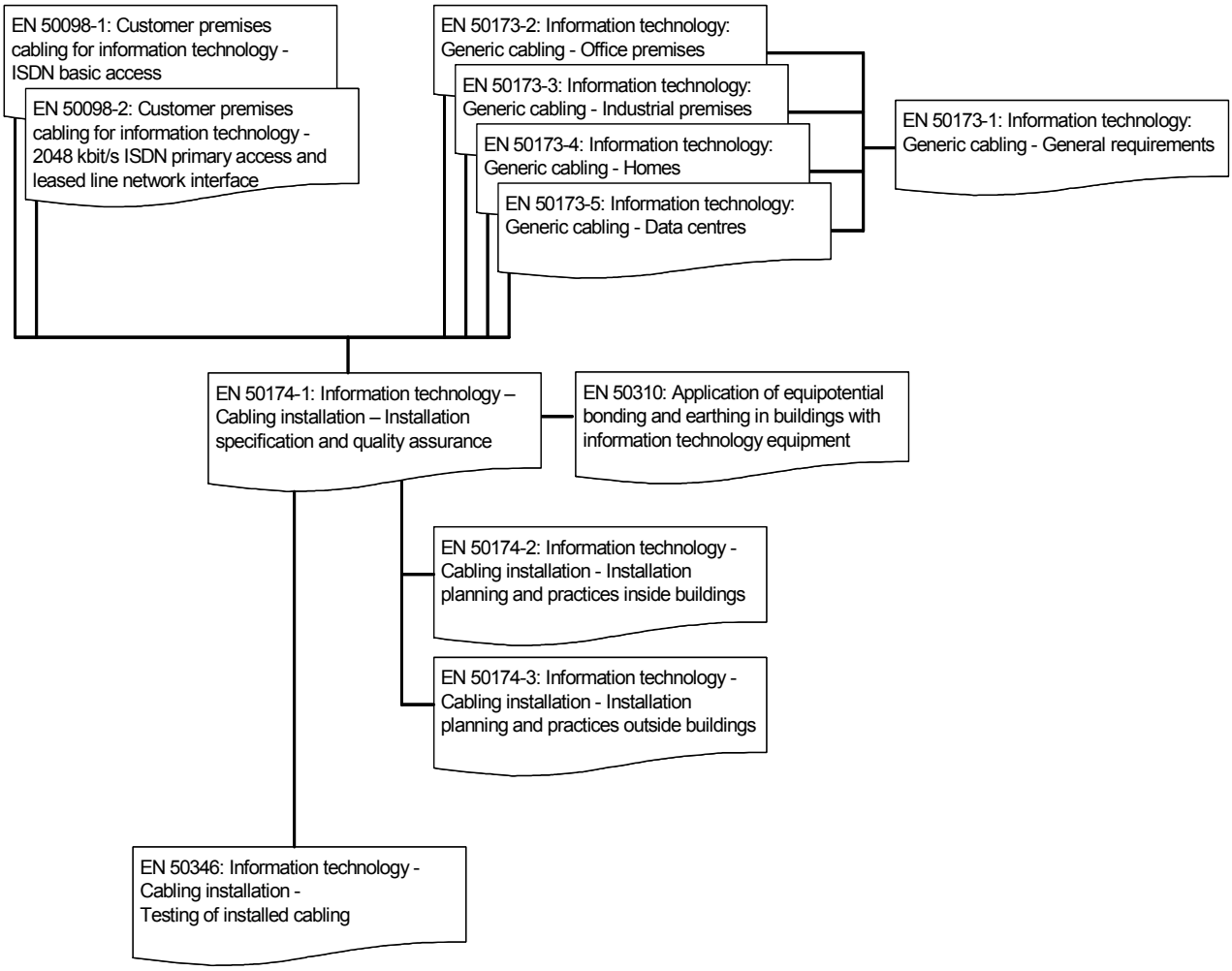

Figure 1 – Schematic relationship between the EN 50174 series and other relevant standards

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 **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	**EN 50174-1** 4: Requirements for specifying installations of information technology cabling

1 Scope and conformance

1.1 Scope

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

a) installation specification, quality assurance documentation and procedures;

b) documentation and administration;

c) operation and maintenance.

This European Standard is applicable to all types of information technology cabling including generic cabling systems designed in accordance with the EN 50173 series.

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 European Standard may be of assistance in meeting these standards and regulations.

1.2 Conformance

For a cabling installation to conform to this European Standard:

a) the specification of the installation shall meet the requirements of Clause 4;

NOTE The requirements and recommendations of Clause 4 are primarily for owners of premises housing information technology systems. The owners may delegate selected responsibilities to designers, specifiers, operators and maintainers of installed information technology cabling. The party responsible for demonstrating conformance should be clearly stated in the appropriate section of the documentation.

b) the installer shall meet the requirements of Clause 5;

c) the equipotential bonding system within the premises shall be in accordance with EN 50310;

d) where a lightning protection system is required, it shall conform to the “integrated lightning protection system” according to EN 62305-4;

e) 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;

f) local regulations, including safety, shall be met.

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 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*

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*