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

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 50174-1:2018+A1:2020 sisaldab Euroopa standardi EN 50174-1:2018 +A1:2020 ja selle muudatust A1:2020.	This Estonian standard EVS-EN 50174-1:2018 +A1:2020 consists of the English text of the European standard EN 50174-1:2018+A1:2020 and its amendment A1:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 29.06.2018, muudatus A1 03.07.2020.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation. Date of Availability of the European standard is 29.06.2018, for A1 03.07.2020.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis ära märgitud märgenditega ▌A1⟩ ⟨A1▐. Standard on kättesaadav Eesti Standardi-keskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by symbols ▌A1⟩ ⟨A1▐. The standard is available from the Estonian Centre for Standardisation.

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ICS 35.110

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50174-1 +A1

June 2018, July 2020

ICS 35.110

Supersedes EN 50174-1:2009

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 European Standard was approved by CENELEC on 2018-05-21. Amendment A1 was approved by CENELEC on 2020-05-27. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard and its Amendment A1 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: Rue de la Science 23, B-1040 Brussels

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Ref. No. EN 50174-1:2018 E + EN 50174-1:2018/A1:2020 E

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European foreword

This document (EN 50174-1:2018) has been prepared by Technical Committee 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) 2019-05-21
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-05-21

This document supersedes EN 50174-1:2009, EN 50174-1:2009/A1:2011 and EN 50174-1:2009/A2:2014.

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 50700.

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).

This edition of EN 50174-1:

a) revises the requirements for remote powering to support power levels offered by IEEE 802.3bt (in preparation);

b) updates various requirements (e.g. in 4.2.5.1 on racks, frames and cabinets and in Table 4 on the level of installation complexity);

c) revises Annex B on optical fibre connecting hardware, resulting an normative requirements (Annex B) and informative recommendations (Annex C);

d) introduces a new Annex G with information regarding EuroClasses for the specification of the “reaction to fire” performance of cables.

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A1 Amendment A1 European foreword

This document (EN 50174-1:2018/A1:2020) 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)	2021-05-27
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2023-05-27

This document amends EN 50174-1:2018.

This amendment:

a) corrects 4.1.3.3.1 regarding remote powering Category RP1;

b) clarifies F.1.2 regarding minimum sample sizes for alien (exogenous) crosstalk testing.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights. A1

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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 organization'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 procedures and documentation;

– 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);

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3) application dependent cabling design (e.g. EN 50700);

4) bonding requirements (EN 50310).

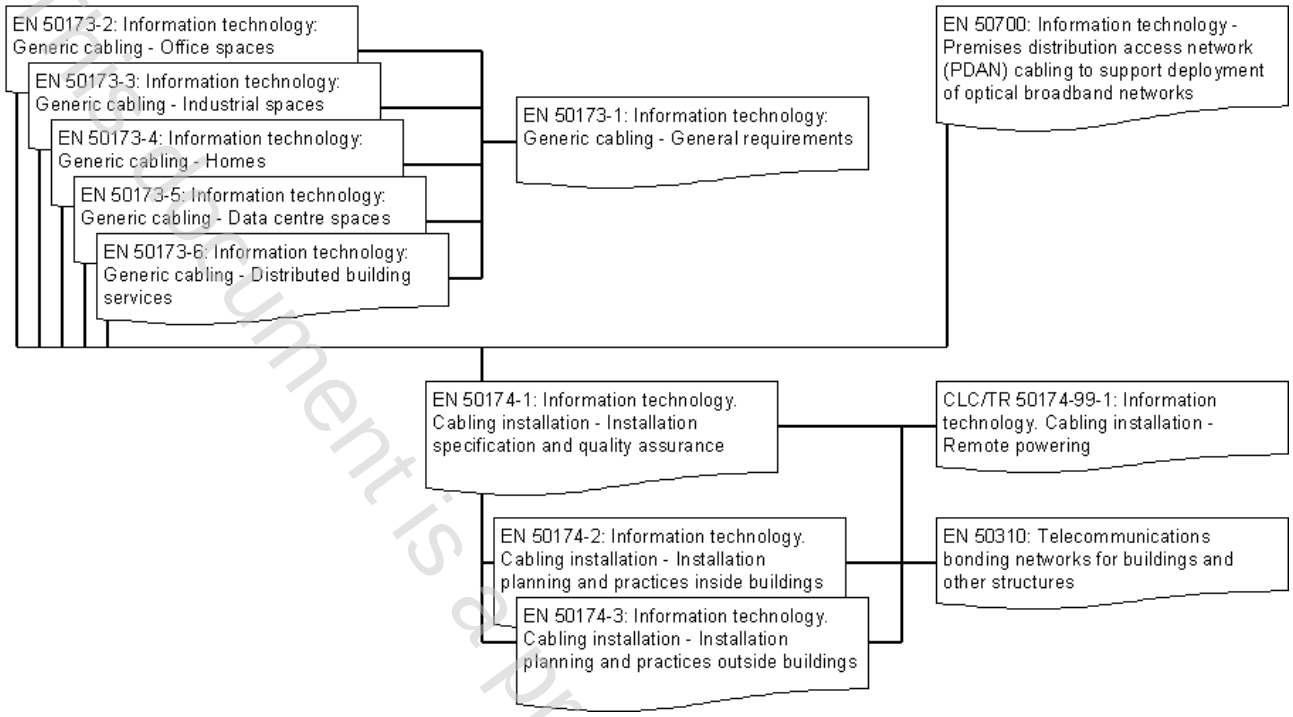

Figure 1 — Schematic relationship between the EN 50174 series and other relevant standards

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	EN 50173–2 EN 50173–3 EN 50173–4 EN 50173–5 EN 50173–6 (these ENs reference general requirements of EN 50173–1)	EN 50174–1 **Planning phase** EN 50174–2 EN 50174–3 EN 50310	EN 50174–2 EN 50174–3 EN 50310	EN 50174–1

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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 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 shall be met.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 13501-6, *Fire classification of construction products and building elements – Part 6: Classification using data from reaction to fire tests on electric cables*

EN 50173-1:2018, *Information technology – Generic cabling systems – Part 1: General requirements*

EN 50173-2, *Information technology – Generic cabling systems – Part 2: Office spaces*

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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*

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 50310, *Telecommunications bonding networks for buildings and other structures*

EN 50667, *Information technology – Automated infrastructure management (AIM) systems – Requirements, data exchange and applications*

EN 60332-1-2, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame (IEC 60332-1-2)*

EN 61935-1, *Specification for the testing of balanced and coaxial information technology cabling – Part 1: Installed balanced cabling as specified in the standards series EN 50173 (IEC 61935-1:2009, modified)*

EN 62305-4, *Protection against lightning – Part 4: Electrical and electronic systems within structures (IEC 62305-4)*

EN 62368-3, *Audio/video, information and communication technology equipment – Safety – Part 3: DC power transfer through information technology communication cabling*

HD 384 (all parts)*, Low-voltage electrical installations (IEC 60364 series, modified)*

HD 60364 (all parts), *Low-voltage electrical installations (IEC 60364 series, modified)*

ISO/IEC/TR 14763-2-1, *Information technology – Implementation and operation of customer premises cabling – Part 2-1: Planning and installation – Identifiers within administration systems*

IEC 60050-151:2001, *International Electrotechnical Vocabulary – Chapter 151: Electrical and magnetic devices*

IEC 60050-161:1990, *International Electrotechnical Vocabulary – Chapter 161: Electromagnetic compatibility*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

Where the cabling is designed in accordance with standards in the EN 50173 series, the additional definitions of those standards are applicable.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

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