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

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

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

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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 2018-05-21. 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.

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Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN 50174-2:2018) 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- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-05-21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 50174-2:2009, EN 50174-2:2009/A1:2011 and EN 50174-2:2009/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 50174-2, 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.

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 50174-2:

- a) revises requirements of Clause 4 and Clause 5, respectively, regarding closures, cables, the stacking height of pathway systems, surge protective devices;
- b) introduces a new subclause 4.11 and Annex C on planning and assessment of cabling in support of remote powering objectives;
- c) amends requirements in Clause 6 on segregation;
- d) modifies Clause 7 on electricity distribution systems and lightning protection;
- e) introduces minor changes to Clauses 8, 9, 10, 11;
- f) removes the previous Annex A;
- g) introduces Clause 12 on cabling for distributed services cabling within buildings, Clause 13 on common infrastructures within multi-tenant buildings, Annex B installation conditions and Annex D on equipment accommodation environments.

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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 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 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.

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.

In addition, this document describes the methodology for the assessment of spaces, pathways (and pathway systems) and cabling (either installed or planned) in support of remote powering objectives.

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 50700);
- 4) bonding requirements (EN 50310).

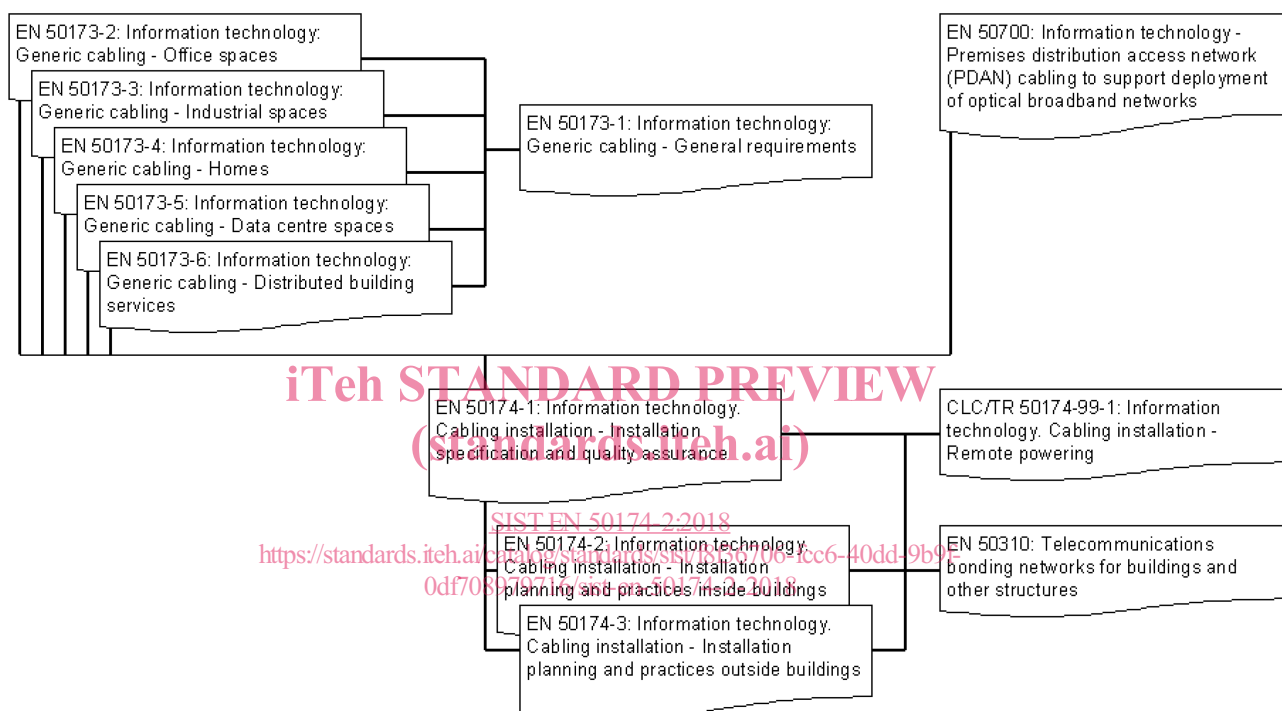


Figure 1 — Schematic relationship between the EN 50174 series and other relevant standards

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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 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		

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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) 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.

NOTE Planning and installation of certain types of application-specific cabling can be supplemented by other standards e.g. EN 50491-6-1 for Home Building Electronics System (HBES) and Building Automation and Control Systems (BACS).

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) describes the methodology for the assessment of spaces, pathways (and pathway systems) and cabling (either installed or planned) in support of remote powering objectives;
- 3) excludes specific requirements applicable to other cabling systems (e.g. power supply cabling); however, it takes account of the effects other cabling systems have on the installation of information technology cabling (and vice versa) and gives general advice;
- 4) excludes those aspects of installation associated with the transmission of signals in free space between transmitters, receivers or their associated antenna systems.

This standard is applicable to certain hazardous environments. It 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 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 shall be met.