SVENSK STANDARD SS-EN 50174-1

| Fastställd | Utgåva | Sida | Ansvarig kommitté |
|---|---|---|---|
| 2009-08-24 | 2 | 1 (1+48) | SEK TK 215 |



# Fastighetsnät för informationsöverföring – Installation av kabelnät – Del 1: Planering och kvalitetssäkring

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

Som svensk standard gäller europastandarden EN 50174-1:2009. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50174-1:2009.

## Nationellt förord

En serie svenska standarder anger hur interna tele- och datatelenät registreras. Den inledande standarden i denna serie är SS 455 12 01, Dokumentation av teletekniska anläggningar.

Utöver den vägledning som ges i denna standard bör gällande regler och praxis för entreprenader beaktas.

För installation av nät för informationsöverföring inom industrin gäller tillsammans med standarderna i serien SS-EN 50174 även SS-EN 61918, Industriell processtyrning – Installation av nät för informationsöverföring.

I en informativ bilaga NA sist i denna standard återges figur 2 i SS-EN 61918 som visar sambandet mellan olika standarder för installation av generella och applikationsberoende industriella kabelnät.

Tidigare fastställd svensk standard SS-EN 50174-1, utgåva 1, 2001, gäller ej fr o m 2012-05-01.

ICS 35.110

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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## *Standarder underlättar utvecklingen och höjer elsäkerheten*

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

## *SEK är Sveriges röst i standardiseringsarbetet inom elområdet*

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

## *Stora delar av arbetet sker internationellt*

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

## *Var med och påverka!*

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 50174-1

May 2009

ICS 35.110

Supersedes EN 50174-1:2000

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



CENELEC

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

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**



Ref. No. EN 50174-1:2009 E

SEK Svensk Elstandard

## 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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## 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).

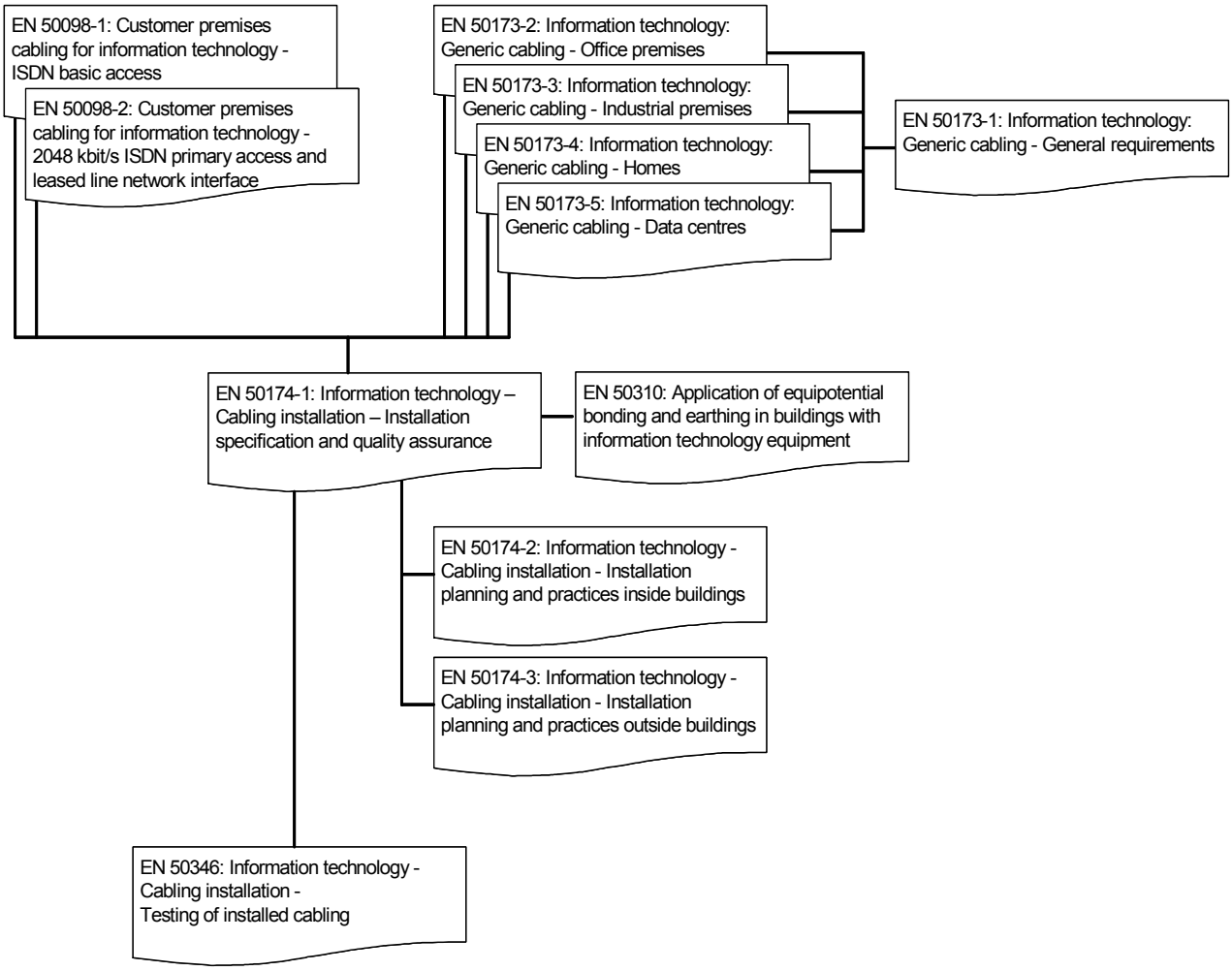


**Figure 1 – Schematic relationship between the EN 50174 series and other relevant standards**

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