SVENSK STANDARD SS-EN 50310

Fastställd	Utgåva	Sida	Ansvarig kommitté
2011-04-06	3	1 (1+35)	SEK TK 215

Fastighetsnät för informationsöverföring – Jordning och potentialutjämning

Application of equipotential bonding and earthing in buildings with information technology equipment

Som svensk standard gäller europastandarden EN 50310:2010. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50310:2010.

Nationellt förord

Tidigare fastställd svensk standard SS-EN 50310, utgåva 2, 2006, gäller ej fr o m 2013-10-01.

ICS 29.120.50; 91.140.50

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 50310

October 2010

ICS 29.120.50; 91.140.50

Supersedes EN 50310:2006

English version

Application of equipotential bonding and earthing in buildings with information technology equipment

Application de liaison équipotentielle et de la mise à la terre dans les locaux avec équipement de technologie de l'information

Anwendung von Maßnahmen für Erdung und Potentialausgleich in Gebäuden mit Einrichtungen der Informationstechnik

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 50310:2010 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 50310 on 2010-10-01.

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 EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-10-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-10-01

This European Standard supersedes EN 50310:2006.

In the course of the revision of EN 50310:2006, some elements from EN 50174-2:2000 have been moved to this European Standard for reasons of clarity.

This European Standard has been produced within the framework of the following considerations.

a) With the ongoing growth of the liberalised telecommunication market, the increasing advent of private telecommunication network operators, and the flourishing use of networking computers, the amount of Information Technology equipment installed in buildings and the complexity of these Information Technology installations are permanently growing.

b) Information Technology equipment is generally installed either as stand-alone equipment (e.g. personal or network computers, small PBXs), or held in racks, cabinets or other mechanical structures (e.g. switching systems, transmission systems, mobile base stations).

c) CENELEC/SC 64B „Electrical installations and protection against electric shock – Protection against thermal effects“ had decided during their meeting in November 1997 not to harmonize IEC 60364-5-548:1996 “*Electrical installations of buildings – Part 5: Selection and erection of electrical equipment – Section 548: Earthing arrangements and equipotential bonding for information technology installations*”.

d) This European Standard shall give guidance to network operators, equipment providers and building owners to agree on a standardised bonding configuration that facilitates

   – compliance of the Information Technology Equipment installation with functional requirements including Electromagnetic Compatibility (EMC) aspects of emission and immunity,
   – compatible building installation and equipment provisions,
   – installation of new equipment in buildings as well as expansion or replacement of installations in existing buildings with equipment coming from different suppliers,
   – a structured installation practice,
   – simple maintenance rules,
   – contracting on a common basis,
   – harmonisation in development, manufacturing, installation and operation.

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Introduction

This European Standard specifies requirements and recommendations for connections (bonds) to earthing networks in buildings in which information technology (IT) equipment is intended to be installed in order to:

a) minimise the risk to that equipment and interconnecting cabling from electrical hazards,

b) provide the information technology installation with:

- a reliable signal reference;
- adequate immunity from electromagnetic interference carried by the earthing network.

Different minimum requirements are specified depending on the intended use of the building with regard to information technology.

The requirements of this European Standard are applicable when information technology cabling installations are planned (including, for example, during the refurbishment of buildings).

This document is intended for:

1) building architects, owners and managers;

2) designers and installers of electrical and information technology cabling installations.

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

- installation specification, quality assurance, planning and installation practices (EN 50174 series);
- generic cabling design (EN 50173 series);
- application dependent cabling design (e.g. EN 50098 series);
- testing of installed cabling (EN 50346);
- this European Standard (EN 50310).

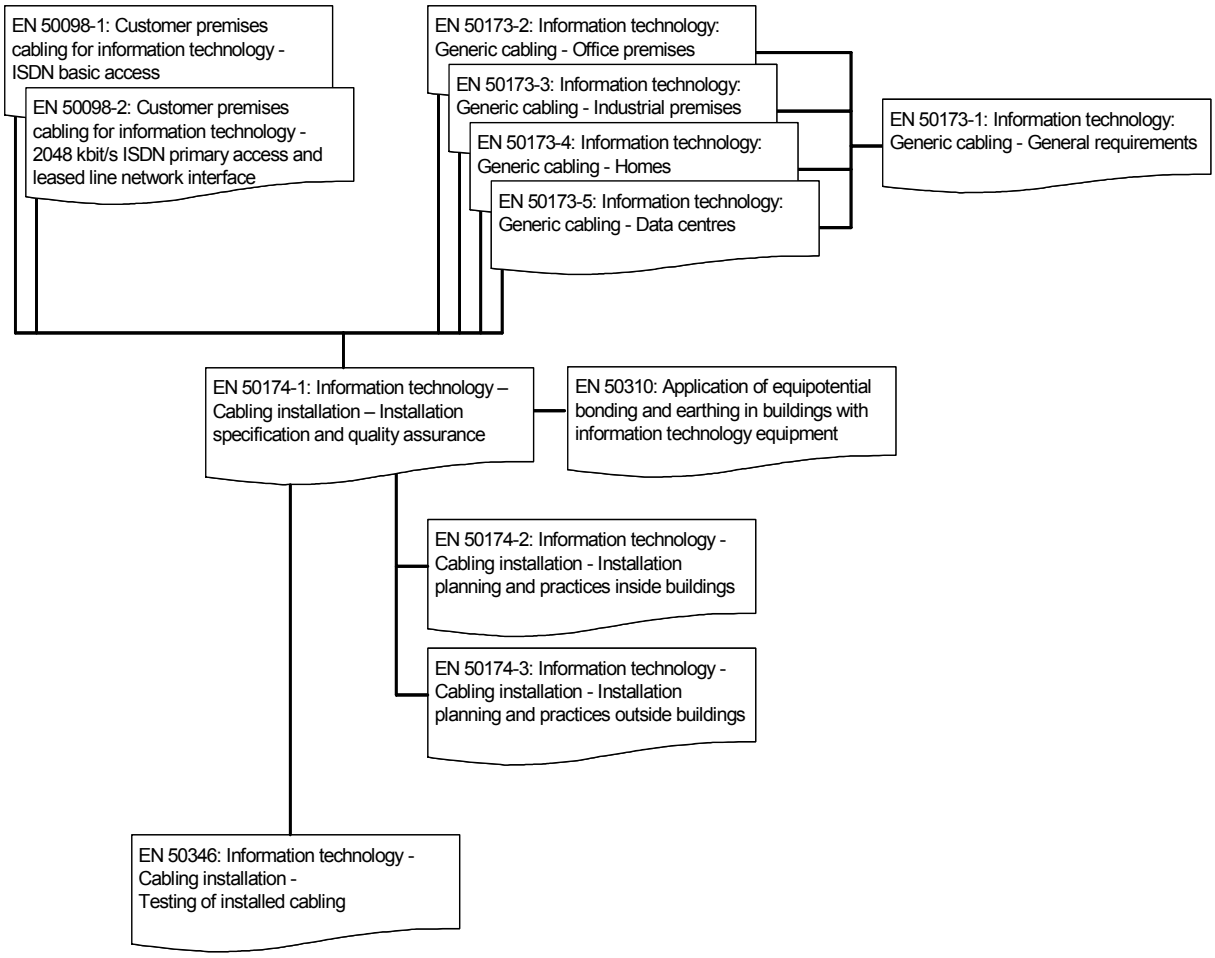

Figure 1 – Schematic relationship between EN 50310 and other relevant standards

Table 1 – Contextual relationship between EN 50310 and other relevant standards

Building design phase	Generic cabling design phase	Specification phase	Installation phase	Operation phase
EN 50310 6 Earthing networks	**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	**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		
	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 50174-2** 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**	**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** **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 minimum requirements for earthing networks and connections (bonds) in buildings in which information technology equipment is intended to be installed to protect that equipment and interconnecting cabling from electrical hazards.

Additionally this European Standard specifies requirements and provides recommendations for earthing networks and connections (bonds) in order for the information technology installation to achieve

a) reliable signal reference,

b) adequate immunity from electromagnetic interference carried by the earthing network.

The requirements of this European Standard are applicable to all types of buildings ranging from residential to large commercial and industrial premises. Operator buildings are addressed by ETSI EN 300 253.

This European standard specifies an earthing and bonding configuration that is appropriate to specific mains and other power supply distribution systems.

NOTE For the purposes of this European Standard bonding networks are connected to earth and therefore create an earthing network.

This European Standard does not:

1) apply to power supply distribution of voltages over AC 1 000 V;

2) address the specific requirements for telecommunication centres (operator buildings); these are specified in ETSI EN 300 253.

Safety requirements for power supply installation 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

In order to conform to this European Standard:

a) the general requirements of Clause 4 shall be met;

b) earthing and bonding networks shall meet the requirements of Clause 5;

c) bonding connections shall meet the requirements of Clause 7;

d) the mains and other power supply distribution systems shall meet the requirements of Clause 8;

e) the installation of information technology cabling shall be in accordance with the EN 50174 series;

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 41003, *Particular safety requirements for equipment to be connected to telecommunication networks and/or a cable distribution system*

EN 50083 series [1)], *Cable networks for television signals, sound signals and interactive services*

EN 50162:2004, *Protection against corrosion by stray current from direct current systems*

EN 50174-1, *Information technology – Cabling installation – Part 1: Installation specification and quality assurance*

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 60079-14, *Explosive atmospheres – Part 14: Electrical installations design, selection and erection* (IEC 60079-14)

EN 60728 series, *Cable networks for television signals, sound signals and interactive services* (IEC 60728 series)

EN 60950-1, *Information technology equipment – Safety – Part 1: General requirements* (IEC 60950-1, mod.)

EN 61140, *Protection against electric shock – Common aspects for installation and equipment* (IEC 61140)

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

HD 60364-4-41, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock* (IEC 60364-4-41:2005, mod.)

HD 60364-4-444, *Low-voltage electrical installations – Part 4-444: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances* (IEC 60364-4-44:2007, mod.)

HD 60364-5-54:2007, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements, protective conductors and protective bonding conductors* (IEC 60364-5-54:2002, mod.)

[1)] Being partly replaced by EN 60728 series.