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Telecommunications bonding networks for buildings and other structures

bsi.

National foreword

This British Standard is the UK implementation of EN 50310:2016. It supersedes BS EN 50310:2010 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee TCT/7, Telecommunications - Installation requirements.

A list of organizations represented on this committee can be obtained on request to its secretary.

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May 2016

ICS 29.120.50; 91.140.50

Supersedes EN 50310:2010

English Version

Telecommunications bonding networks for buildings and other structures

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

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European foreword

This document (EN 50310:2016) was prepared by the 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)	2017–04–11
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2019–04–11

This document supersedes EN 50310:2010.

In 2012, EN 50310:2010 had been offered to ISO/IEC JTC 1/SC 25 “Interconnection of information technology equipment” as input to the agreed project to seek global harmonization of the technical requirements for telecommunications bonding networks. This project, ISO/IEC 30129, has been finished successfully. Thus, TC 215 decided to transpose ISO/IEC 30129 into the fourth edition of EN 50310 with minimal editorial changes to fit European needs. In this context, also the title of EN 50310 has been changed to adopt the title of ISO/IEC 30129.

EN 50310 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 standardized 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,

– harmonization in development, manufacturing, installation and operation.

Introduction

This European Standard

1) specifies assessment criteria to determine the relevant bonding configurations that are appropriate,

2) enables the implementation of any bonding configurations that may be necessary by means of either

   – the provision of a bonding network that utilizes the existing protective bonding network for electrical safety, or

   – the provision of a dedicated bonding network for the telecommunications infrastructure.

This standard is intended for

- building architects, owners and managers,
- designers and installers of electrical and telecommunications cabling installations.

Users of this standard should be familiar with all applicable cabling design and installation standards.

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).

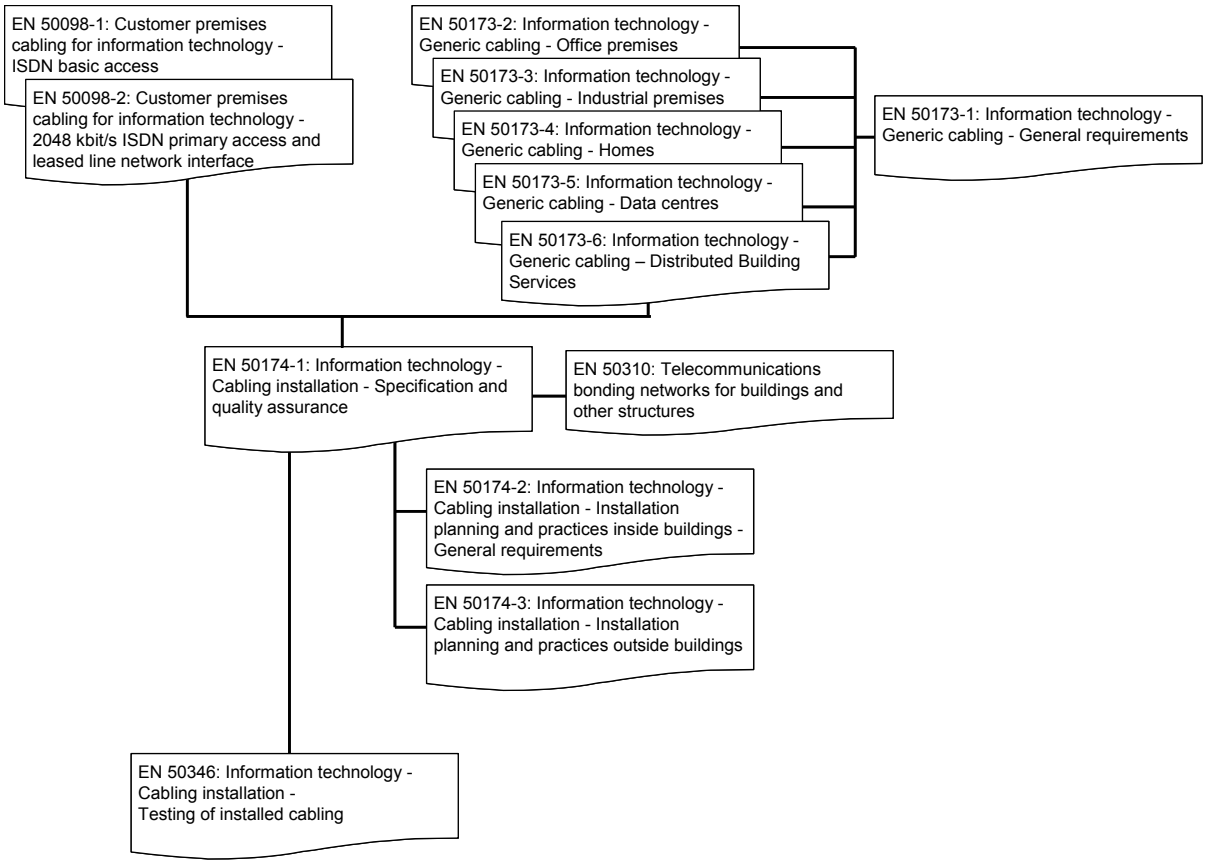


Figure 1 – Schematic relationship between EN 50310 and other relevant standards

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 Selection of bonding network	**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 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 bonding) EN 50310 and EN 50346** 4 General requirements 5 Test parameters for balanced cabling 6 Test parameters for optical fibre cabling	

1 Scope

This European Standard specifies requirements and provides recommendations for the design and installation of connections (bonds) between various electrically conductive elements in buildings and other structures, during their construction or refurbishment, in which information technology (IT) and, more generally, telecommunications equipment is intended to be installed in order to:

a) minimize the risk to the correct function of that equipment and interconnecting cabling from electrical hazards;

b) provide the telecommunications installation with a reliable signal reference – which may improve immunity from electromagnetic interference (EMI).

The requirements of this European Standard are applicable to the buildings and other structures within premises addressed by EN 50174-2 (e.g. residential, office, industrial and data centres) but information given in this European Standard may be of assistance for other types of buildings and structures.

NOTE Telecommunications centres (operator buildings) are addressed by ETSI/EN 300 253.

This European Standard does not apply to power supply distribution of voltages over AC 1 000 V.

Electromagnetic compatibility (EMC) requirements and 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 the requirements of these standards and regulations.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN 50174-2:2009, *Information technology – Cabling installation – Part 2: Installation planning and practices inside buildings*

EN 50174-2:2009/A1:2011, *Information technology – Cabling installation – Part 2: Installation planning and practices inside buildings*

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

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)*

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)*

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