

INTERNATIONAL STANDARD

Information technology – Telecommunications bonding networks for buildings
and other structures

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INFORMATION TECHNOLOGY –

TELECOMMUNICATIONS BONDING NETWORKS FOR BUILDINGS AND OTHER STRUCTURES

FOREWORD

- 1) ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.
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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

ISO/IEC 30129 edition 1.1 contains the first edition (2015-10) and its amendment 1 (2019-02) [documents JTC1-SC25/2849/FDIS and JTC1-SC25/2858/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard ISO/IEC 30129 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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INTRODUCTION

This International Standard specifies requirements and 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) minimise 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).

This International Standard

- specifies assessment criteria to determine the relevant bonding configurations that are appropriate,
- enables the implementation of any bonding configurations that may be necessary by means of either
 - the provision of a bonding network that utilises 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

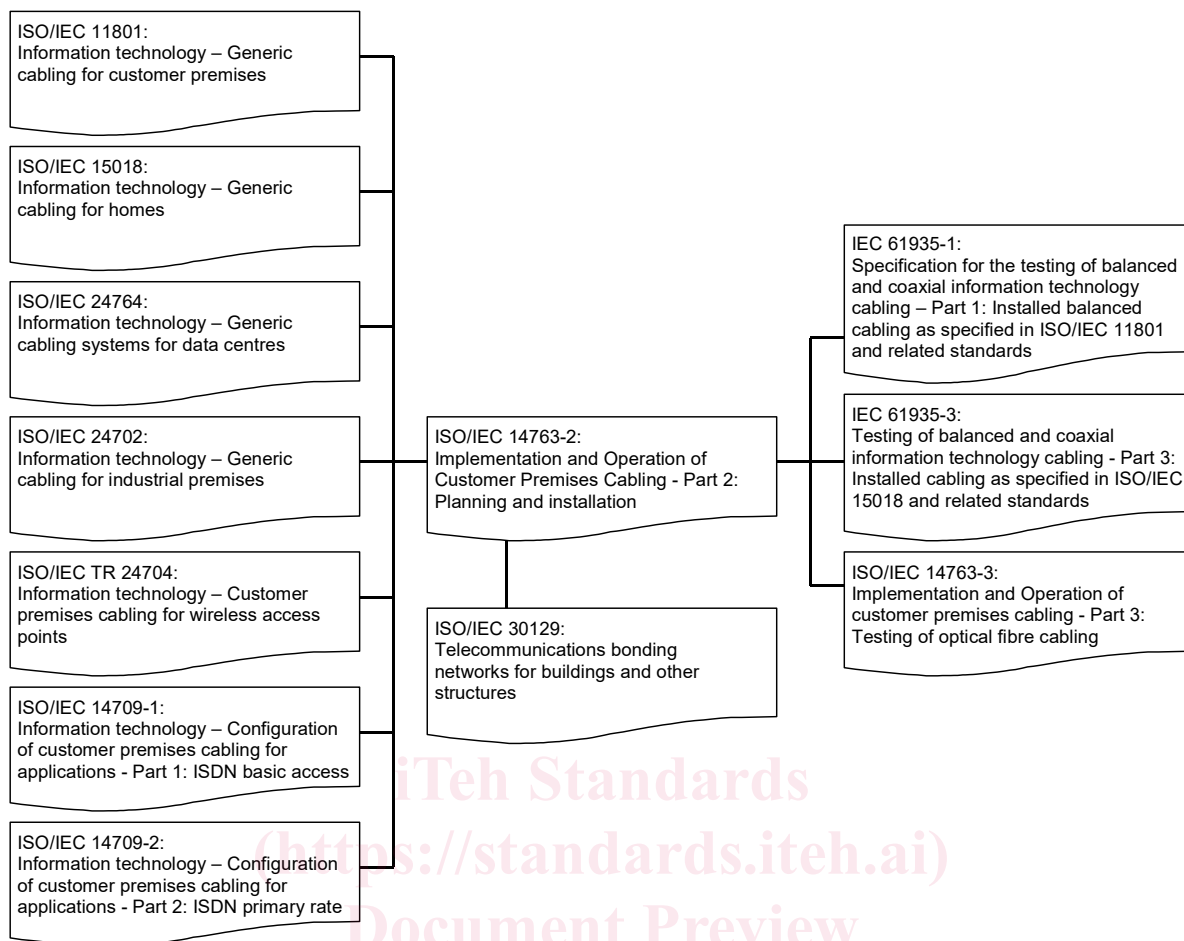
- building architects, owners and managers,
- designers and installers of electrical and telecommunications cabling installations.

This International Standard is one of a number of documents prepared in support of international standards and technical reports for cabling design produced by ISO/IEC JTC 1/SC 25. Figure 1 shows the inter-relationship between these standards and technical reports.

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

NOTE Telecommunications infrastructure affects raw material consumption. The infrastructure design and installation methods also influence product life and sustainability of electronic equipment life cycling. These aspects of telecommunications infrastructure impact our environment. Since building life cycles are typically planned for decades, technological electronic equipment upgrades are necessary. The telecommunications infrastructure design and installation process magnifies the need for sustainable infrastructures with respect to building life, electronic equipment life cycling and considerations of effects on environmental waste. Telecommunications designers are encouraged to research local building practices for a sustainable environment and conservation of fossil fuels as part of the design process.



IEC

Figure 1 – Schematic relationship between ISO/IEC 30129 and other relevant standards

INFORMATION TECHNOLOGY –

TELECOMMUNICATIONS BONDING NETWORKS FOR BUILDINGS AND OTHER STRUCTURES

1 Scope

This International Standard specifies requirements and 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) minimise 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 International Standard are applicable to the buildings and other structures within premises addressed by ISO/IEC 14763-2 (e.g. residential, office, industrial and data centres) but information given in this International Standard may be of assistance for other types of buildings and structures.

NOTE Telecommunications centres (operator buildings) are addressed by ITU-T K.27.

This International 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 International Standard and are covered by other standards and regulations. However, information given in this International 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.

IEC 60364-4-41, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-4-44:2007, *Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

IEC 60364-5-54, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors*

IEC 60950-1, *Information technology equipment – Safety – Part 1: General requirements*

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

ISO/IEC 14763-2:2012, *Information technology – Implementation and operation of customer premises cabling – Part 2: Planning and installation*

IEC 61557-4, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 4. Resistance of earth connection and equipotential bonding*

IEC 61557-5, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 5. Resistance to earth*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document the following definitions apply in addition to those of ISO/IEC 14763-2. Alternatives to certain terms are provided in Annex C.

3.1.1

access provider

operator or another entity providing the means to enable external telecommunications services provision to a subscriber

3.1.2

asymmetric cabling

cabling within which the cable elements are asymmetric (unbalanced)

3.1.3

application

system, including its associated transmission method, which is supported by telecommunications cabling

3.1.4

backbone bonding conductor

telecommunications bonding connection which interconnects telecommunications bonding backbones

3.1.5

balanced application

application designed and optimized to operate over symmetric cabling

3.1.6

common bonding network

set of interconnected conductive structures that combine the functions of a protective bonding network and a telecommunications bonding network

3.1.7

equipment bonding conductor

conductor that connects a protective bonding network to an item of telecommunications equipment

3.1.8

main earthing terminal

terminal or busbar which is part of the earthing arrangement of an installation and enabling the electric connection of a number of conductors for earthing purposes

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