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Information technology - Telecommunications bonding networks for buildings and other structures

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FOREWORD

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

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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,~~ or telecommunications technology 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

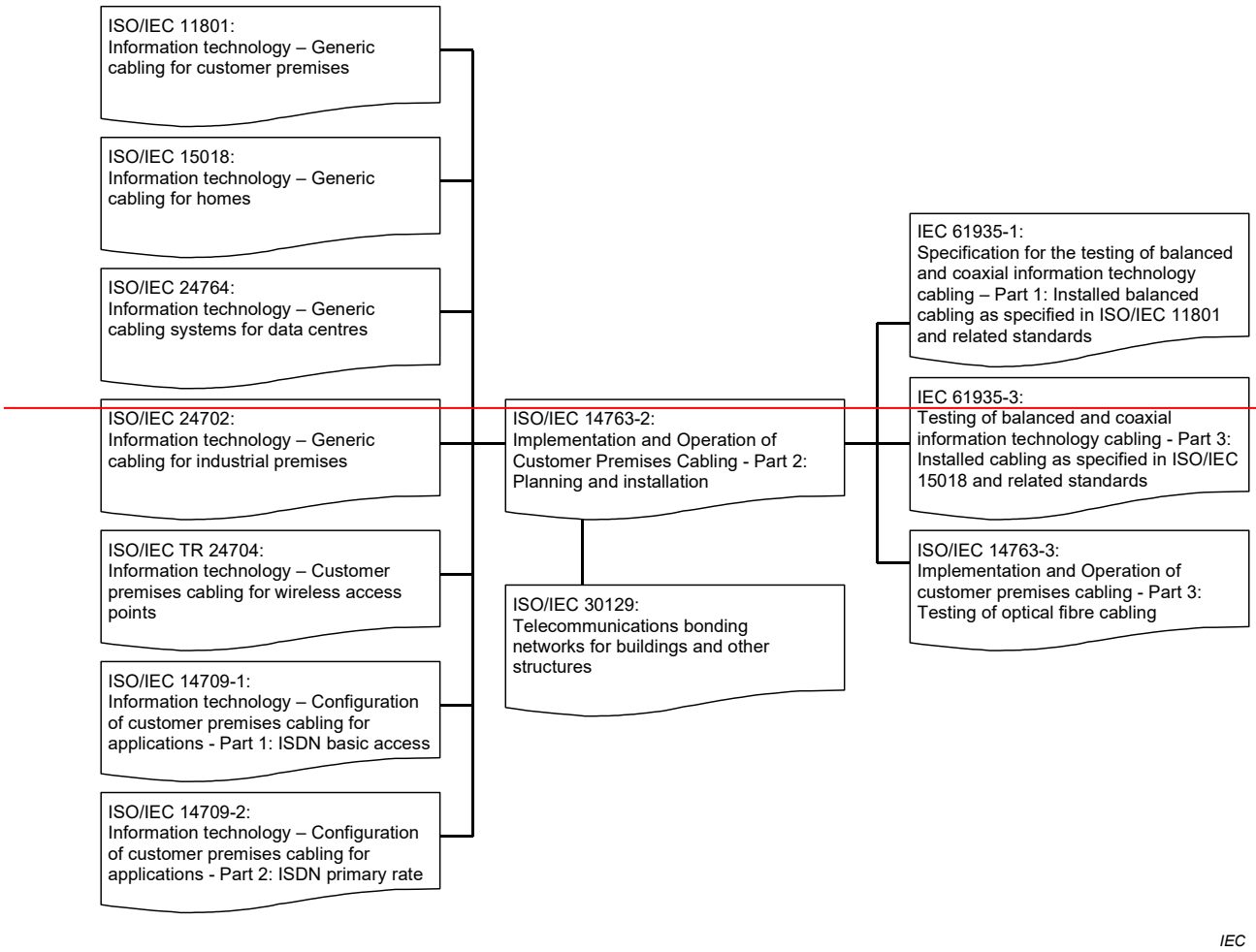
- building architects, owners and managers,

- 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.

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.



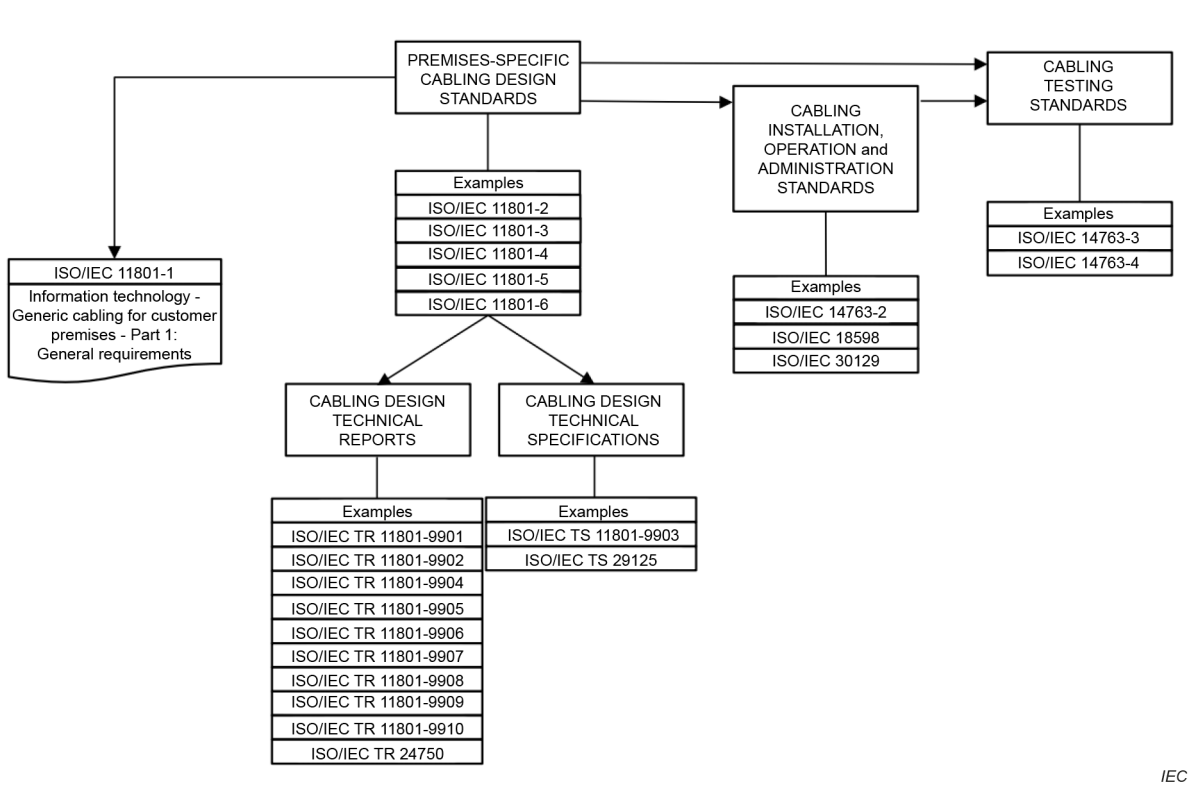


Figure 1 – Schematic relationship between ISO/IEC 30129 and other relevant standards

1 Scope

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c) minimise the ~~risk to the correct function of that equipment and interconnecting cabling from electrical hazards~~ d.c. and a.c. potential differences in telecommunications networks due to electromagnetic disturbance, power transients, and other causes to reduce the risk of malfunction of equipment, and

d) provide the telecommunications installation with a reliable signal reference – which ~~may improve~~ improves 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 62368-1, *Audio/video, information and communication technology equipment - Part 1: Safety 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*

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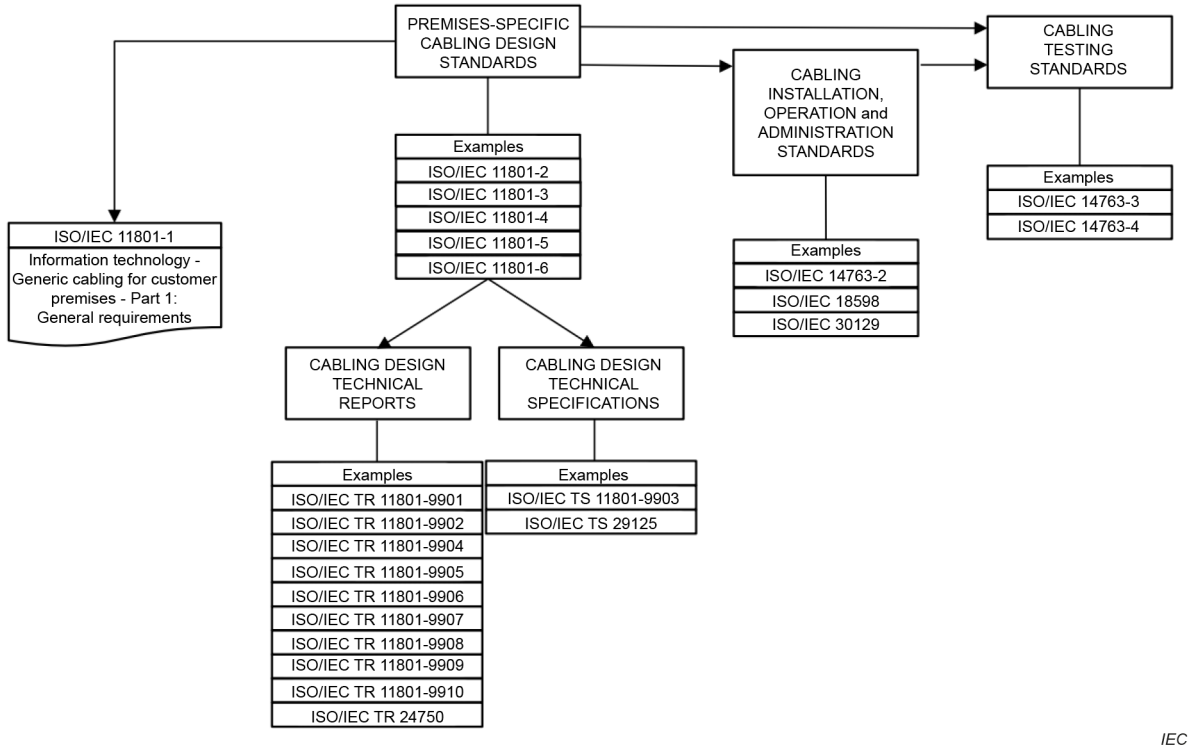

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