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Standards

Irish Standard  
I.S. EN 50173-1:2011

# Information technology - Generic cabling systems -- Part 1: General requirements

## I.S. EN 50173-1:2011

*Incorporating amendments/corrigenda issued since publication:*

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**Information technology -  
Generic cabling systems -  
Part 1: General requirements**

Technologies de l'information -  
Systèmes de câblage générique -  
Partie 1: Exigences générales

Informationstechnik -  
Anwendungsneutrale  
Kommunikationskabelanlagen -  
Teil 1: Allgemeine Anforderungen

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**CENELEC**

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

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## I.S. EN 50173-1:2011

EN 50173-1:2011

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### Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 215, *Electrotechnical aspects of telecommunication equipment*. This 3<sup>rd</sup> edition of EN 50173-1 replaces the text of EN 50173-1:2007, EN 50173-1:2007/A1:2009 and consolidates these two standards with the text of EN 50173-1:2007/FprAB:2010 for the convenience of the user of the standard.

The text of draft amendment EN 50173-1:2007/FprAB was submitted to the Formal Vote and was approved by CENELEC to amend EN 50173-1:2007 on 2011-04-01.

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) 2012-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-04-01

The previous editions of European Standards EN 50173:1995 and EN 50173-1:2002 have been developed to enable the application-independent cabling to support ICT applications in office premises. Their basic principles, however, are applicable to other types of applications and in other types of premises.

TC 215 has decided to establish relevant European Standards which address the specific requirements of these premises. In order to point out the commonalities of these cabling design standards, these ENs are published as individual parts of the series EN 50173, thus also acknowledging that standards users recognize the designation “EN 50173” as a synonym for generic cabling design.

At the time of publication of this European Standard, series EN 50173 comprises the following standards:

- EN 50173-1 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

This edition of EN 50173-1:

- a) contains a change of electromagnetic parameters in the MICE classification (Table 3);
- b) introduces new component Categories 6<sub>A</sub> and 7<sub>A</sub> in accordance with the channel Classes E<sub>A</sub> and F<sub>A</sub> defined in EN 50173-1:2007/A1:2009;
- c) modifies insertion loss requirements for coaxial channels;
- d) modifies optical fibre Class OF-100 media and defines a new cabled optical fibre Category OM4;
- e) amends and modifies connecting hardware requirements, defines both a new interface for 2 optical fibres and for 12 and 24 fibres;
- f) introduces limits for additional parameters in Annexes A, B and D.2;
- g) revises D.3 regarding test requirements for mechanical and environmental performance of connecting hardware;
- h) updates Annex F “Supported applications”;

- i) introduces a new normative Annex I “Test procedures to assess conformance with EN 50173 standards”;
- j) amends various other subclauses, tables and figures.

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## **Introduction**

This European Standard contains general requirements in support of the other standards in the EN 50173 series.

It should be noted that generic cabling is a passive system and cannot be tested for EMC compliance individually. Application-specific equipment, designed for one or more cabling media, is required to meet relevant EMC standards on those media. Care should be taken that the installation of any of those media in a cabling system does not degrade the characteristics of the system. The installation methods of EN 50174 series should be used to minimise the effect of electromagnetic disturbances. For EMC requirements of BCT cabling see EN 50083-8.

Series EN 50174 and EN 50310 specify requirements for earthing and equipotential bonding.

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

- 1) this and other parts of the EN 50173 series;
- 2) application dependent cabling design (e.g. EN 50098 series);
- 3) installation (EN 50174 series);
- 4) testing of installed cabling (EN 50346);
- 5) equipotential bonding requirements (EN 50310).

In addition, a number of Technical Reports have been developed to support or extend the application of these standards, including:

- CLC/TR 50173-99-1, *Cabling guidelines in support of 10 GBASE-T*;
- CLC/TR 50173-99-2, *Information technology – Implementation of BCT applications using cabling in accordance with EN 50173-4*.

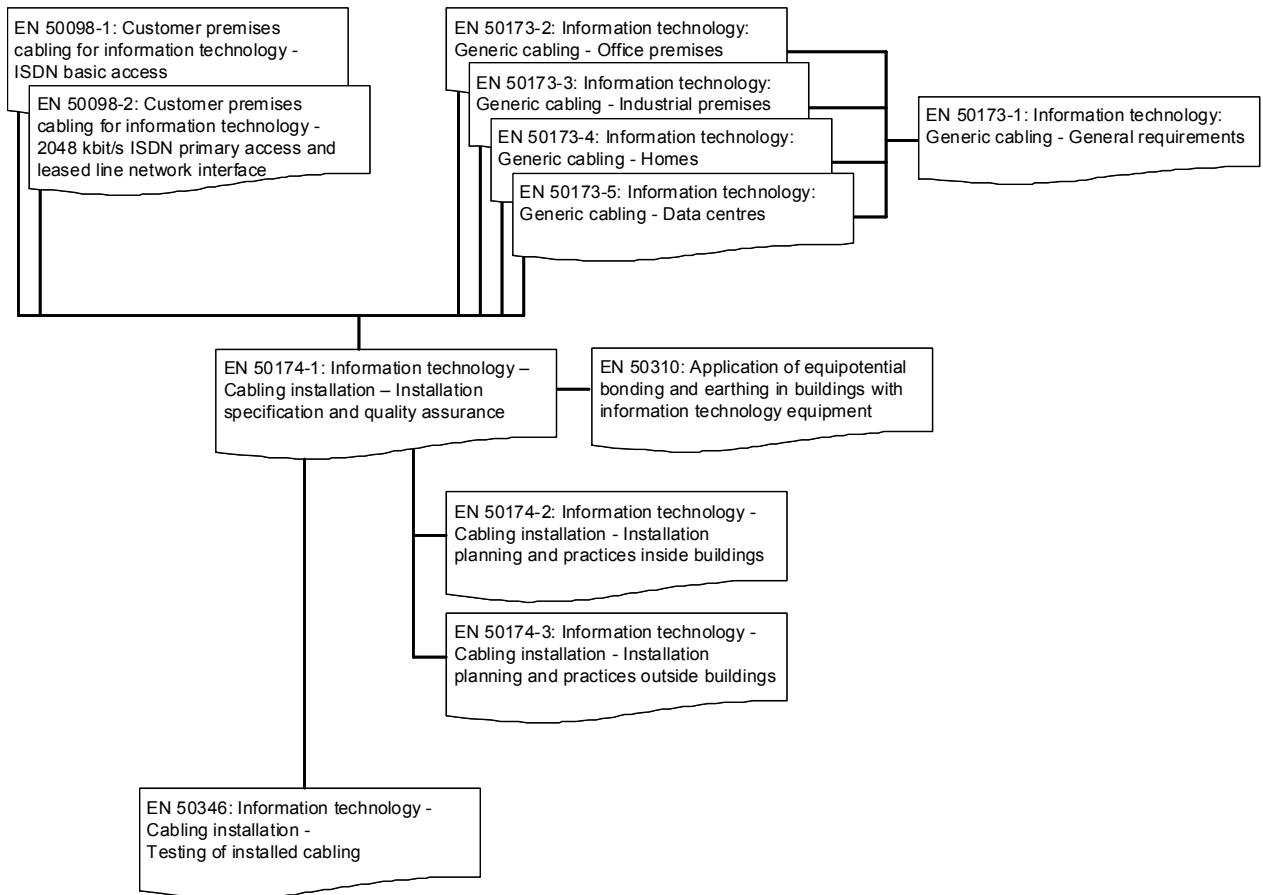


Figure 1 – Schematic relationship between the EN 50173 series and other relevant standards

**Table 1 – Contextual relationship between EN 50173 series and other standards relevant for information technology cabling systems**

Building design phase	Generic cabling design phase	Specification phase	Installation phase	Operation phase
<p>EN 50310</p> <p>6. Bonding networks</p>	<p>EN 50173 series except EN 50173-4</p> <p>4: Structure</p> <p>5: Channel performance</p> <p>7: Cable requirements</p> <p>8: Connecting hardware requirements</p> <p>9: Requirements for cords and jumpers</p> <p>A: Link performance limits</p>	<p>EN 50174-1</p> <p>4 Requirements for specifying installations of information technology cabling</p> <p>5: Requirements for installers of information technology cabling</p>		<p>EN 50174-1</p> <p>4: Requirements for specifying installations of information technology cabling</p>
		<p><b>Planning phase</b></p>		
		<p>EN 50174-2</p> <p>4: Requirements for planning installations of information technology cabling</p> <p>6: Segregation of metallic information technology cabling and power supply cabling</p> <p>7: Electricity distribution systems and lightning protection</p>		
	<p>and EN 50173-4</p> <p>4 and 5: Structure</p> <p>6: Channel performance</p> <p>8: Cable requirements</p> <p>9: Connecting hardware requirements</p> <p>10: Requirements for cords and jumpers</p> <p>A: Link performance limits</p>	<p>and EN 50174-3</p> <p>and (for equipotential bonding) EN 50310</p>	<p>and EN 50174-3</p> <p>and (for equipotential bonding) EN 50310</p> <p>and EN 50346</p> <p>4: General requirements</p> <p>5: Test parameters for balanced cabling</p> <p>6: Test parameters for optical fibre cabling</p>	



## 1 Scope and conformance

### 1.1 Scope

This European Standard specifies:

- a) the structure and configuration of the backbone cabling subsystems of generic cabling systems within the types of premises defined by the other standards in the EN 50173 series;
- b) channel performance requirements in support of the standards in the EN 50173 series;
- c) link performance requirements in support of the standards in the EN 50173 series;
- d) backbone cabling reference implementations in support of the standards in the EN 50173 series;
- e) component performance requirements in support of the standards in 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

This European Standard does not contain specific conformance requirements. The other standards in the EN 50173 series incorporate the requirements of this standard as part of their individual conformance requirements.

## 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 50083 (series), *Cable networks for television signals, sound signals and interactive services*

NOTE EN 50083 series is gradually replaced by EN 60728 series.

EN 50117-1, *Coaxial cables – Part 1: Generic specification*

EN 50117-4-1, *Coaxial cables – Part 4-1: Sectional specification for cables for BCT cabling in accordance with EN 50173 – Indoor drop cables for systems operating at 5 MHz – 3 000 MHz*

EN 50174-1:2009, *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 50288-1, *Multi-element metallic cables used in analogue and digital communication and control – Part 1: Generic specification*

EN 50288-2-1, *Multi-element metallic cables used in analogue and digital communication and control – Part 2-1: Sectional specification for screened cables characterized up to 100 MHz – Horizontal and building backbone cables*

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