Information technology - Generic cabling systems -- Part 6: Distributed building services

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NATIONAL FOREWORD

See Eesti standard EVS-EN 50173-6:2013 sisaldab Euroopa standardi EN 50173-6:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 50173-6:2013 consists of the English text of the European standard EN 50173-6:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Informationstechnik - Anwendungsneutrale Kommunikationskabelanlagen - Teil 6: Verteilte Gebäudedienste

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CENELEC

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

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Foreword

This document (EN 50173-6:2013) has been prepared by 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) 2014-07-22
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-07-22

The 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.

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

At the time of publication of this European Standard, EN 50173 series 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*

— EN 50173-6 *Information technology – Generic cabling systems – Part 6: Distributed building services*

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Introduction

The importance of the information technology cabling infrastructure is similar to that of other utilities such as heating, lighting and electricity supplies. As with other utilities, interruptions to service can have serious impact. Poor quality of service due to lack of planning, use of inappropriate components, incorrect installation, poor administration or inadequate support can threaten an organisation's effectiveness.

Historically, the cabling within premises comprised both application-specific and multipurpose networks. Standards within the EN 50173 series have enabled a controlled migration to generic cabling (with an associated reduction in the use of application-specific cabling) and supported the development of high data rate applications based upon defined cabling models.

This European Standard, EN 50173-6, specifies generic cabling that supports a wide range of communication services within premises that comprise single or multiple buildings on a campus. It has been prepared to reflect the increasing use of generic cabling in support of non-user specific services, many of which require the use of remote powered devices including:

I) telecommunications, e.g. wireless access points;

II) energy management, e.g. lighting, power distribution, incoming utility metering;

III) environmental control, e.g. temperature, humidity;

IV) personnel management, e.g. access control, cameras, passive infra-red (PIR) detectors, time and attendance monitoring, electronic signage, audio-visual (AV) projectors;

V) personal information and alarms, e.g. paging, patient monitoring, nurse call, infant security.

The distribution of these services is provided:

i) using the balanced cabling channel Classes of EN 50173-2 and the all-silica optical fibre cabling channel Classes of EN 50173-1;

ii) to locations other than those specified by premises-specific standards in the EN 50173 series either as a stand-alone structure and configuration or as an overlay to an EN 50173 structure and configuration.

This European Standard is not intended to replace the application of other premises-specific standards in EN 50173 series but has been prepared in recognition of the fact that, although certain functional elements of service distribution cabling may be co-located with those of other generic cabling infrastructures, service distribution cabling may be:

- specified, installed and operated by different entities than those responsible for other generic cabling infrastructures that may be installed within the premises;
- specified and installed at a different time than other generic cabling infrastructures that may be installed within the premises.

This European Standard provides:

a) users with an application independent generic cabling system and an open market for cabling components;

b) users with a flexible cabling scheme such that modifications are both easy and economical;

c) building professionals (for example, architects) with guidance allowing the accommodation of cabling before specific requirements are known; i.e. in the initial planning either for construction or refurbishment;

d) industry and standardization bodies with a cabling system which supports current products and provides a basis for future product development and applications standardization.

This European Standard specifies multi-vendor cabling, and is related to:

- standards for cabling components developed by Technical Committees of CENELEC and/or IEC;

- standards for the quality assurance and installation of information technology cabling (EN 50174 series) and testing of installed cabling (EN 50346);

- applications developed by the Technical Committees of IEC (including the subcommittees of ISO/IEC JTC 1) and study groups of ITU-T.

The applications listed in EN 50173-1:2011, Annex F, have been analysed to determine the requirements for a generic cabling system. These requirements, together with statistics concerning premises geography from different countries and the models described in Clause 6, have been used to develop the requirements for cabling components and to stipulate their arrangement into cabling systems.

As a result, generic cabling defined within this European Standard is targeted at, but not limited to, office premises. It is anticipated that the generic cabling system meeting the minimum requirements of this European Standard will have a life expectancy in excess of ten years.

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

1) this part and other parts of 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);

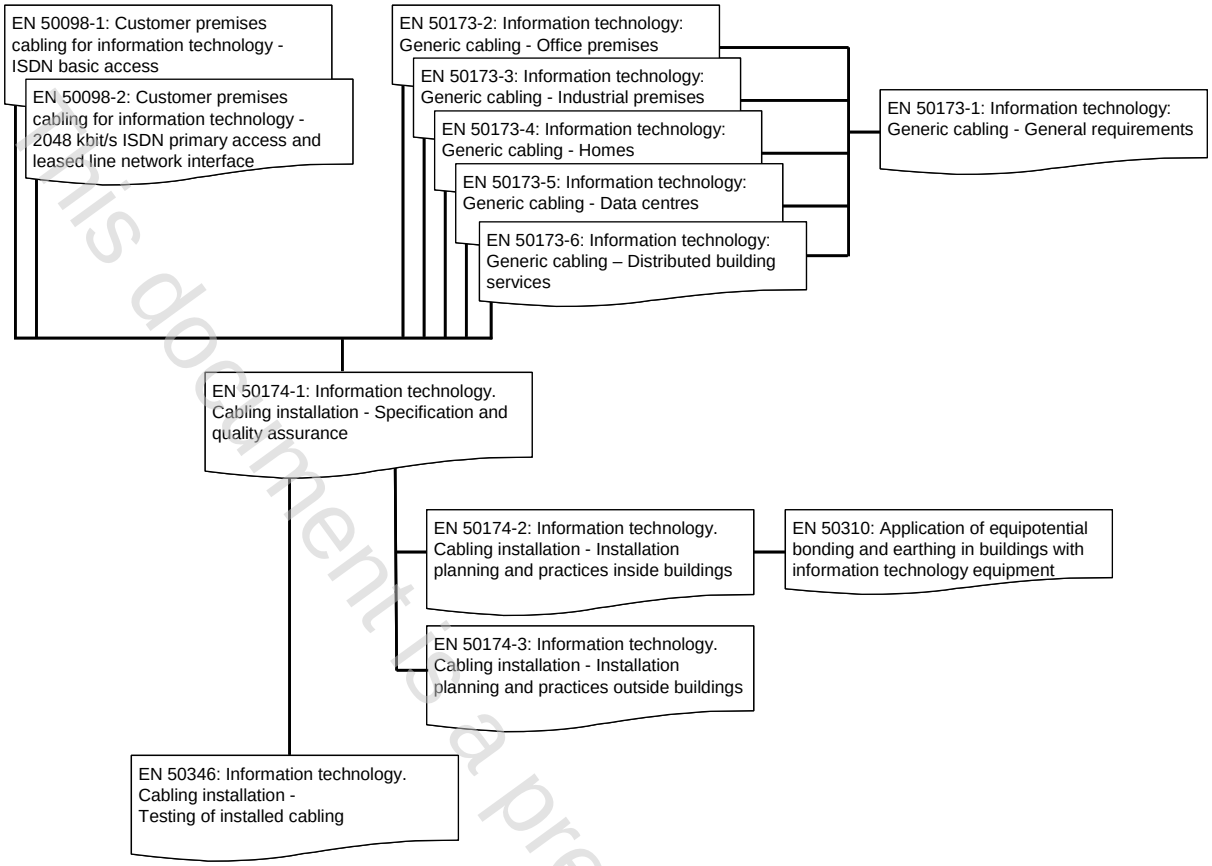
5) equipotential bonding requirements (EN 50310).

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*;

– CLC/TR 50173-99-3, *Information technology – Generic cabling systems – Part 99-3: Home cabling infrastructures up to 50 m in length to support simultaneous and non simultaneous provision of applications*.



NOTE For the purposes of the standards in EN 50173 and EN 50174 series, the term “information technology” includes ICT, BCT and CCCB applications.

Figure 1 — Schematic relationship between 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
EN 50310 6. Bonding 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 8: Office (commercial) premises 9: Industrial premises 10: Homes 11: Data centres **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 generic cabling that supports a wide range of communication services within premises that comprise single or multiple buildings on a campus. It addresses the increasing use of generic cabling in support of non-user specific services, many of which require the use of remote powered devices including telecommunications, energy management, environmental control, personnel management, personal information and alarms.

The distribution of these services is provided to locations (e.g. for wireless access points, remote powered devices and building management systems) other than those specified in premises-specific standards in EN 50173 series by means of either:

a) an overlay structure and configuration to that specified within EN 50173 series, or

b) a stand-alone structure and configuration.

It covers balanced cabling and optical fibre cabling.

This European Standard is based upon and references the requirements of EN 50173-1, and in addition specifies implementation options.

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

For a cabling system to conform to this European Standard:

a) the structure and configuration shall conform to the requirements of Clause 4;

b) the interfaces to the cabling at the service outlets (SO) and service concentration points (SCP) shall conform to the requirements of Clause 8 with respect to mating interfaces;

c) connecting hardware at other places in the cabling structure shall meet the requirements specified in Clause 8;

d) the performance of channels shall conform to the requirements of Clause 5. This shall be achieved by one of the following:

   1) a channel design and implementation ensuring that the prescribed channel performance Class of Clause 5 is met;

   2) attachment of appropriate components to a link design meeting the prescribed performance Class of Annex A. Channel performance shall be ensured where a channel is created by adding more than one cord to either end of a link meeting the requirements of Annex A;

   3) using the reference implementations of Clause 6 and compatible cabling components conforming to the requirements of Clauses 7, 8 and 9, based upon a statistical approach of performance modelling.

e) local regulations concerning safety shall be met.

In addition, the requirements of EN 50174 series shall be met.

The test parameters to be measured and the sampling levels to be applied for a particular installation shall be defined in the installation specification and quality plans for that installation prepared in accordance with EN 50174-1.

The treatment of measured results that fail to meet the requirements of this subclause, or lie within the relevant measurement accuracy, shall be clearly documented within a quality plan as described in EN 50174-1.

Test methods to verify conformance with the channel and link requirements of Clause 5 and Annex A respectively are specified in EN 50346.

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 50173-1:2011, *Information technology — Generic cabling systems — Part 1: General requirements*

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 61076-3-106:2006, *Connectors for electronic equipment — Product requirements — Part 3-106: Rectangular connectors — Detail specification for protective housings for use with 8-way shielded and unshielded connectors for industrial environments incorporating the IEC 60603-7 series interface (IEC 61076-3-106:2006)*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50173-1 and the following apply.

NOTE EN 50173-1:2011, 3.1.5, defines “application” as “system, with its associated transmission method that is supported by telecommunications cabling”.

3.1.1
area feeder cable
cable connecting the service distributor to the service concentration point(s) of Type B generic cabling

3.1.2
building service
non-user specific service within premises including, but not restricted to, building automation, security, access control, building management, wireless access points, information displays and alarm systems

3.1.3
distributed building service
building service provided to locations additional to those specified in premises-specific standards in EN 50173 series