SLOVENSKI STANDARD
SIST EN 50173-20:2023

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Informacijska tehnologija - Generični kabelski sistemi - 20. del: Alternativne kabelske konfiguracije

Information technology - Generic cabling systems - Part 20: Alternative cabling configurations

Informationstechnik - Anwendungsneutrale Kommunikationskabelanlagen - Teil 20: Alternative Verkabelungskonfigurationen

Technologies de l'information - Systèmes de câblage générique - Partie 20: Configurations alternatives de câblage

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European foreword

This document (EN 50173-20:2022) 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) 2023-10-17
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2025-10-17

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.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

This document contains requirements for cabling configurations which use cabling components meeting the requirements of EN 50173-1 but in configurations that do not conform to the structure of generic cabling in the premises-specific documents EN 50173-2 to EN 50173-6.

These configurations are described as:

a) direct attach cabling;

b) end-to-end (E2E) links;

c) modular plug terminated links (MPTL).

The configurations of this document do not replace the generic cabling solutions of EN 50173-2, EN 50173-3, EN 50173-4, EN 50173-5 and EN 50173-6.

The transmission performance of these configurations implemented using balanced cabling components is specified in terms of Class in order to indicate their ability to support the relevant applications of EN 50173-1.

The transmission performance of these configurations implemented using optical fibre cabling components is not specified and refers the application support parameters of EN 50173-1.

Remote powering is covered in EN 50174-1 (Planning) and in EN 50174-2 (installation).

The cabling configurations of this document are passive systems 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 cabling. The installation methods of EN 50174 series should be used to minimise the effect of electromagnetic disturbances.

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) installation (EN 50174 series);

3) bonding (EN 50310).

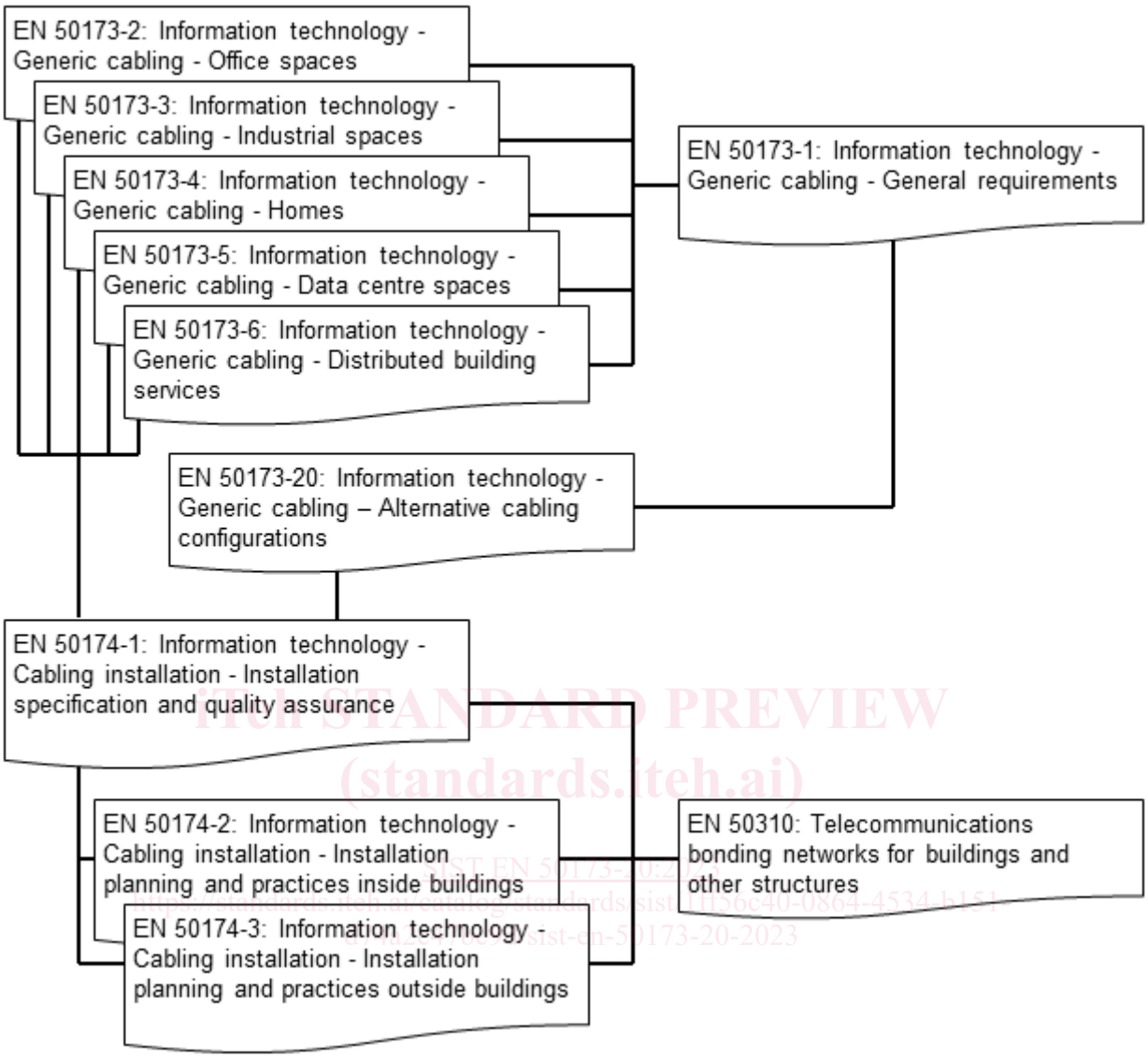

Figure 1 — Schematic relationship between the EN 50173 series and other relevant standards

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
EN 50310	EN 50173-XX	EN 50174-1 Planning phase EN 50174-2 EN 50174-3 EN 50310	EN 50174-2 EN 50174-3 EN 50310	EN 50174-1

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*.

In addition, a number of cabling design standards have been developed using components of EN 50173-1 (e.g. EN 50098 series and EN 50700).

1 Scope

This document specifies:

a) configurations of cabling which use components meeting the requirements of EN 50173-1 but do not conform to the structure of generic cabling specified in the premises-specific documents EN 50173-2 to EN 50173-6;

b) channel transmission and environmental performance requirements including those by reference to EN 50173-1.

NOTE The configurations of this document do not replace the generic cabling solutions of EN 50173-2, EN 50173-3, EN 50173-4, EN 50173-5 and EN 50173-6.

Test procedures to verify conformance of the balanced cabling configurations to the cabling transmission performance requirements of this document are provided in EN 50697.

Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this document and are covered by other standards and regulations.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 50173-1:2018, *Information technology — Generic cabling systems — Part 1: General requirements*

EN 50174-1:2018, *Information technology — Cabling installation — Part 1: Installation specification and quality assurance*[1]

EN 50174 (series), *Information technology — Cabling installation*

EN 50310, *Telecommunications bonding networks for buildings and other structures*

EN 50697, *Information technology — Measurement of end-to-end links, modular plug terminated links and direct attach cabling*

EN 60603-7(series), *Connectors for electronic equipment — Part 7: Detail specification for 8-way, shielded, free and fixed connectors*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document the terms and definitions of EN 50173-1 and EN 50174-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

[1] As impacted by EN 50174-1:2018/A1:2020.

3.1.1
bulkhead connector
connection that serves as an interconnection point located through an enclosure wall

3.1.2
direct attach cabling
cable with free connectors at each end, and with no intermediate connecting hardware, that connects two pieces of equipment

3.1.3
end-to-end link
end-to-end transmission path terminated with a free connector on each end

Note 1 to entry: It can be formed by structured cabling based on passive components including the portion of the end connection that is attached to the link and the portion of the end connection that is attached to the end equipment.

3.1.4
modular plug terminated link
link terminated with a free connector on one end and a fixed connector at the other end

3.2 Abbreviations

For the purposes of this document the abbreviations of EN 50173-1 and EN 50174-1 and the following apply.

CA	coupling attenuation
E2E	end-to-end
ffs	for further study
MPTL	modular plug terminated link

3.3 Symbols

For the purposes of this document the following symbols apply.


bulkhead connector assembly with connections separated by ≥ 0,1 m (acting as two connections)


bulkhead connector assembly with connections separated by < 0,1 m (acting as one connection)


connection


fixed connector


free connector

4 Conformance

For a cabling to conform to this document the following applies:

a) The configuration and structure of the cabling shall conform to the requirements of Clause 5.

b) The environmental performance shall meet the requirements of 6.1.

c) The transmission performance shall meet the requirements of 6.2.

For balanced cabling, test methods to assess conformance with the transmission performance requirements are specified in EN 50697.

For optical fibre cabling, test methods to assess conformance with the transmission performance requirements are specified in Annexes A, B and C.

d) The requirements of EN 50174 series standards and EN 50310 shall be met.

This document provides the requirements and recommendations for testing, while the sampling levels shall comply with EN 50174-1:2018,[1] Annex F.

The test parameters to be measured, the sampling levels and the treatment of measured results 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.

5 Cabling configurations

5.1 Direct attach cabling

5.1.1 General

Direct attach cabling can be used to connect items of information technology equipment but does not constitute any part of, and cannot be exchanged with any part of, the generic cabling structures specified in EN 50173-2, EN 50173-3, EN 50173-4, EN 50173-5 or EN 50173-6.

The configuration of direct attach cabling is shown in Figure 2 and comprises a length L of cable terminated in free connectors. As a result, it can have the physical attributes of an equipment cord or patch cord as defined in EN 50173-1 but its function is different.

The performance of the terminating free connectors is included in the specification of direct attach cabling.

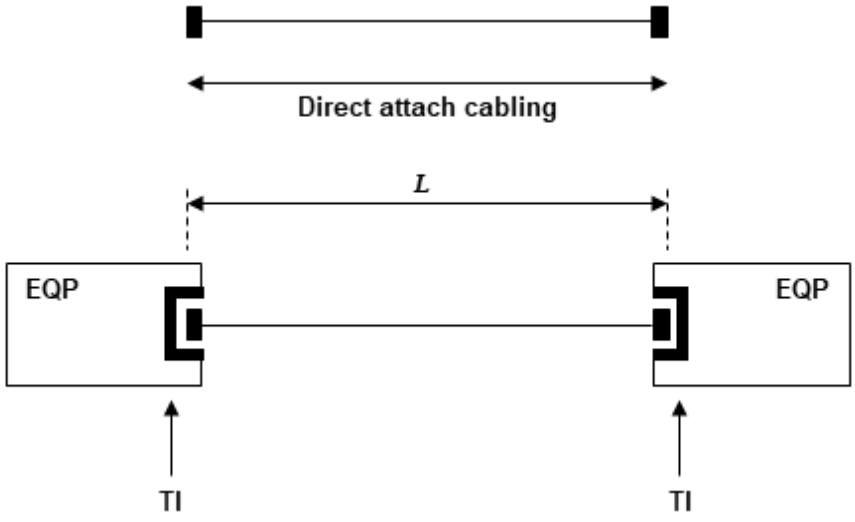

Figure 2 — Direct attach cabling configuration