

## საქართველოს სტანდარტი

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საინფორმაციო ტექნოლოგიები - საერთო საკაბელო სისტემები - ნაწილი 3:  
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English Version

## Information technology - Generic cabling systems - Part 3: Industrial spaces

Technologies de l'information - Systèmes de câblage  
générique - Partie 3: Espaces industriels

Informationstechnik - Anwendungsneutrale  
Kommunikationskabelanlagen - Teil 3: Industriell genutzte  
Bereiche

This European Standard was approved by CENELEC on 2018-03-19. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Europäisches Komitee für Elektrotechnische Normung

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## European foreword

This document (EN 50173-3:2018) has been prepared by the Technical Committee CENELEC 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) 2019-03-19
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-03-19

This document supersedes EN 50173-3:2007 + A1:2010 + AC:2011.

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.

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 EN 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 spaces
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

This European Standard, EN 50173-3, contains specific requirements for generic cabling systems intended to be operated in industrial premises, referencing the general requirements of EN 50173-1:2018

This edition of EN 50173-3:

- introduces new balanced cabling component Categories 8.1 and 8.2 to support new channel Classes I and II;
- introduces a new cabled optical fibre Category OM5 and Category OS1a;
- introduces a new Annex on the industrial cabling subsystem;
- amends various other subclauses, tables and figures;
- aligns the document structure across the EN 50173 series and updates the document both technically and editorially.

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 cabling infrastructure is similar to that of other fundamental utilities such as water and energy supply and interruptions to the services provided over that infrastructure can have a serious impact. A lack of design foresight, the use of inappropriate components, incorrect installation, poor administration or inadequate support can threaten quality of service and have commercial consequences for all types of users.

This standard specifies generic cabling to serve the automation islands in industrial premises, or industrial spaces within other types of building.

Additionally those premises can include:

- office spaces for which generic cabling is specified in EN 50173-2;
- data centre spaces for which generic cabling is specified in EN 50173-5.

Generic cabling for distributed building services in industrial spaces is specified in EN 50173-6 which addresses all of the above premises and spaces within them.

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).

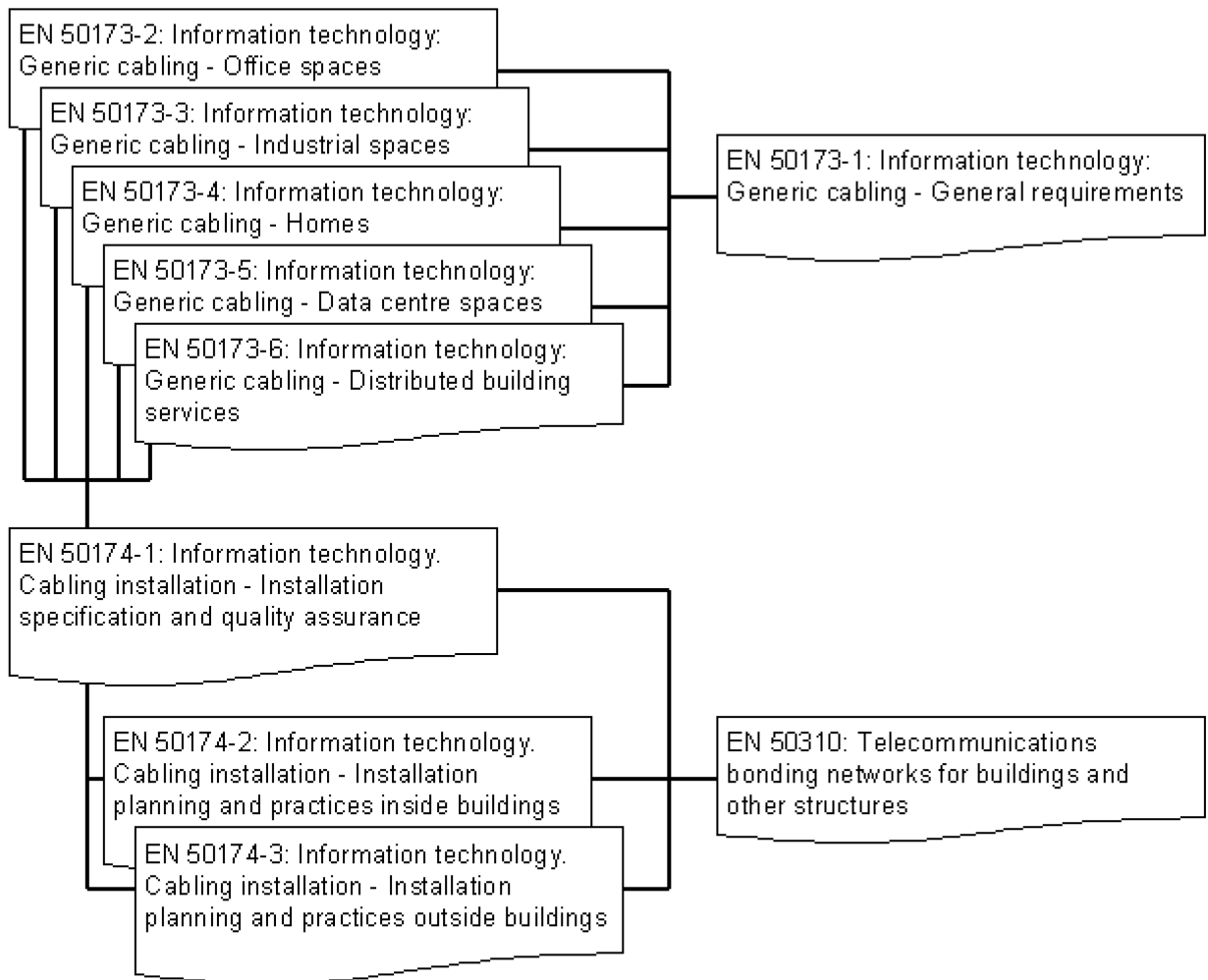


Figure 1 — Schematic relationship between the EN 50173 series and other relevant standards

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 50173-2	EN 50174-1	EN 50174-2 EN 50174-3 EN 50310	EN 50174-1
	EN 50173-3	Planning phase		
	EN 50173-4 EN 50173-5 EN 50173-6 (these ENs reference general requirements of EN 50173-1)	EN 50174-2 EN 50174-3 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*.

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).

The generic cabling specified by this standard provides users with:

- an application independent system capable of supporting a wide range of applications in a range of installation and operating environments;
- a flexible scheme such that modifications are both easy and economical;
- a multi-vendor supply chain within an open market for cabling components.

In addition this standard provides:

- a) relevant industry professionals with guidance allowing the accommodation of cabling before specific requirements are known; i.e. in the initial planning either for construction or refurbishment and for further deployment as the requirements of areas are defined;
- b) industry and standardization bodies with a cabling system which supports current products and provides a basis for future product development and applications standardization.

Applications addressed in this standard include those developed by the Technical Committees of IEC (including the subcommittees of ISO/IEC JTC 1) and study groups of ITU-T. In addition the Fieldbus applications of EN 61784 (series) are included in order to support critical automation, process control and monitoring applications in a range of industrial environments.

Physical layer requirements for the applications listed in EN 50173-1:2018, Annex F, have been analysed to determine their compatibility with the cabling performance specified in this standard and, together with statistics concerning premises geography from different countries and the models described in Clause 4, have been used to develop the requirements for cabling components and to stipulate their arrangement into cabling systems.

As a result, this standard:

- a) specifies a structure for generic cabling supporting a wide variety of applications including, but not restricted to, those in EN 50173-1:2018, Annex F;
- b) adopts balanced cabling channel and link Classes D, E, E<sub>A</sub>, F and F<sub>A</sub>, specified in EN 50173-1;
- c) adopts optical fibre cabling channel and link requirements specified in EN 50173-1;
- d) adopts component requirements, specified in EN 50173-1, and specifies cabling implementations that ensures performance of links and of channels meeting the requirements of a specified group (e.g. Class) of applications.

With appropriate choice of components, generic cabling systems meeting the requirements of this standard are expected to have a life expectancy consistent with other infrastructures within industrial premises.

Figure 2 shows the relationships between the generic cabling standards produced by CLC TC215 and the application specific standards that apply to the industrial premises produced by CLC SC65CX.

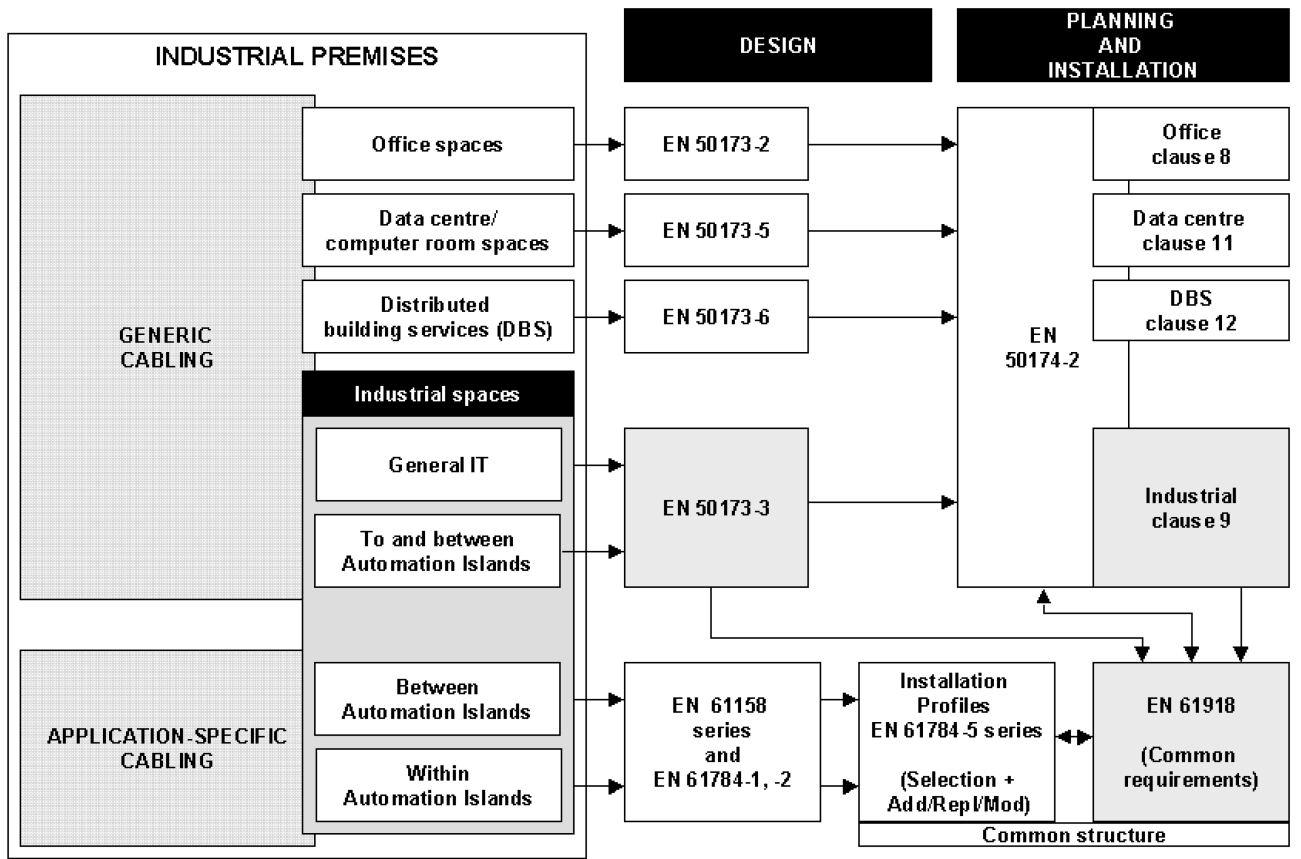


Figure 2 — Relationships between the generic cabling standards produced by CLC TC215 and CLC SC65CX