SLOVENSKI STANDARD
SIST EN 50173-5:2008/A1:2011

01-september-2011

Informacijska tehnologija - Univerzalni sistemi polaganja kablov - 5. del: Podatkovna središča - Dodatek A1

Information technology - Generic cabling systems - Part 5: Data centres

Informationstechnik - Anwendungsneutrale Kommunikationskabelanlagen - Teil 5: Rechenzentren

Technologies de l'information - Systèmes de câblage générique - Partie 5: Centres de données

Ta slovenski standard je istoveten z: **EN 50173-5:2007/A1:2010**

ICS:

33.040.50	Vodi, zveze in tokokrogi	Lines, connections and circuits
35.110	Omreževanje	Networking

SIST EN 50173-5:2008/A1:2011 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50173-5/A1

December 2010

ICS 33.040.50

English version

Information technology - Generic cabling systems - Part 5: Data centres

Technologies de l'information -
Systèmes de câblage générique -
Partie 5: Centres de données

Informationstechnik -
Anwendungsneutrale
Kommunikationskabelanlagen -
Teil 5: Rechenzentren

This amendment A1 modifies the European Standard EN 50173-5:2007; it was approved by CENELEC on 2010-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 Central Secretariat or to any CENELEC member.

This amendment 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 50173-5:2007/A1:2010 E

Foreword

This amendment was prepared by the Technical Committee CENELEC TC 215, Electrotechnical aspects of telecommunication equipment.

The text of the draft was submitted to the formal vote and was approved by CENELEC as amendment A1 to EN 50173-5:2007 on 2010-12-01.

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 amendment has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-12-01
– latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2013-12-01

This standard introduces several changes in order to align the standard with the changes resulting from the introduction of new Channel classes and component Categories in EN 50173-1:201X. Furthermore it introduces a new normative annex on the use of high density optical fibre connecting hardware.

For the convenience of the reader of this standard, the pertinent tables are reproduced in total, with grey shading of new table cells. Where modifications to text apply to single expressions or a few words only, this is indicated by underlining.

Text of A1 to EN 50173-5:2007

General change

Replace all occurrences of "EN 50173-1:2007" **with** "EN 50173-1:201X" (in addition to the changes indicated below).

Introduction

Replace Figure 1 **with**:

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*.

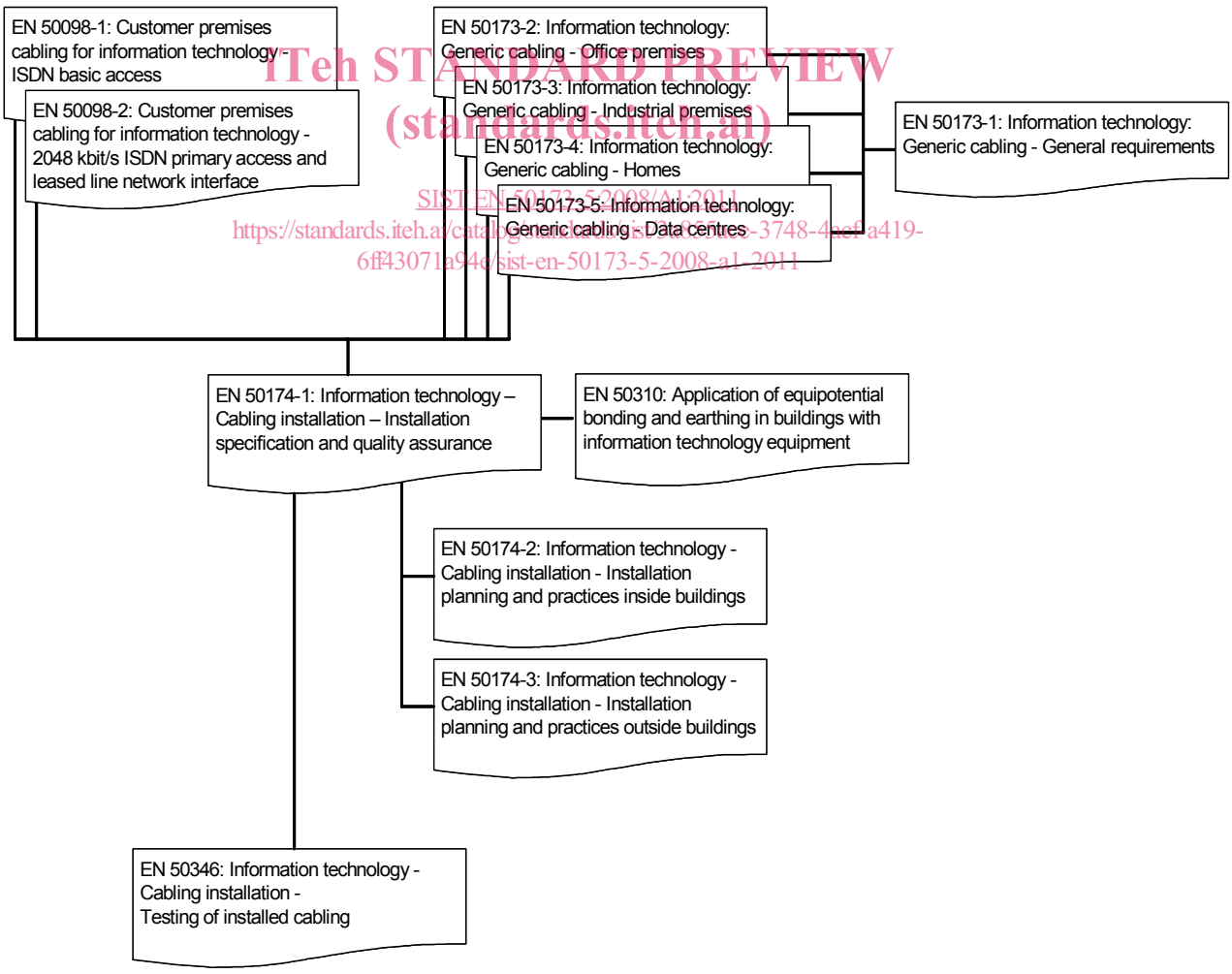


Figure 1 – Schematic relationship between the EN 50173 series and other relevant standards

Replace Table 1 **with**:

Table 1 – Contextual relationship between EN 50173 series and other relevant standards

Building design phase	Generic cabling design phase	Specification phase	Installation phase	Operation phase
EN 50310	**EN 50173 series except EN 50173-4**	**EN 50174-1**		**EN 50174-1**
6: Bonding networks	4: Structure 5: Channel performance 7: Cable requirements 8: Connecting hardware requirements 9: Requirements for cords and jumpers A: Link performance limits	4: Requirements for specifying installations of information technology cabling 5: Requirements for installers of information technology cabling		4: Requirements for specifying installations of information technology cabling
		Planning phase		
	and EN 50173-4	**EN 50174-2**	**EN 50174-2**	
	4 and 5: Structure 6: Channel performance 8: Cable requirements 9: Connecting hardware requirements 10: Requirements for cords and jumpers A: Link performance limits	4: Requirements for planning installations of information technology cabling 6: Segregation of metallic information technology cabling and power supply cabling 7: Electricity distribution systems and lightning protection	5: Requirements for the installation of information technology cabling 6: Segregation of metallic information technology cabling and power supply cabling 8: Office (commercial) premises 9: Industrial premises 10: Homes 11: Data centres	
		and EN 50174-3	**and EN 50174-3**	
		and (for equipotential bonding) EN 50310	**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	

1.2 Conformance

In the English version, **replace** bullet c), second sub-bullet, **with**:

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;

In all versions, **replace** text starting from “In addition the following requirements” up to and including bullet g) **by**:

In addition the requirements of the EN 50174 series of standards 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 clause, or lie within the relevant measurement accuracy, shall be clearly documented within a quality plan as described in EN 50174-1.

Delete the sentence “Neither this standard nor EN 50174-1 specify the test and sampling levels to be adopted”.

Delete the last paragraph, which starts with “Specifications marked “ffs” (for further study) …”.

2 Normative references

Update the reference to EN 50173-1:2007 to read “EN 50173-1:201X”.

Update the title of EN 50174-1 to read “*Information technology – Cabling installation – Part 1: Installation specification and quality assurance*”

Replace the reference to EN 61754-7 with:

EN 61754-7, *Fibre optic connector interfaces - Part 7: Type MPO connector family (IEC 61754-7)*

Add the following references:

EN 61754-20:201X, *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family (IEC 61754-20:201X)*

Delete references to EN 50377-7-1, EN 50377-7-2, EN 50377-7-3 and EN 50377-7-4.

4.6.2 Channels and links

Delete in the 1st paragraph “between specific test interfaces”.

5.3.2 Balanced cabling

Replace 1st paragraph **with**:

The main distribution and zone distribution cabling shall be designed to provide a channel performance as required from Class E_A or higher as specified in EN 50173-1:201X, taking into consideration the requirements for application support over the lifetime of the cabling.

Delete the NOTE.

5.3.3 Optical fibre cabling

Replace existing text **with**:

Cabling shall be designed using the cabled optical fibre Categories referenced in Clause 7 to provide channel performance as required from Classes OF-100, OF-300, OF-500, OF-2000, OF-5000 and OF-10000 as specified in EN 50173-1:201X.

Where multimode optical fibre is used, the main distribution and zone distribution cabling shall be designed to provide a minimum of Class OF-300 channel performance using cabled optical fibres of 7.3.1.1.

6.2.2.1 Component choice

Replace 2nd paragraph **with**:

Using the models of 6.2.2.2:

a) Category 6_A components provide Class E_A balanced cabling performance;

b) Category 7 components provide Class F balanced cabling performance;

c) Category 7_A components provide Class F_A balanced cabling performance.

6.2.2.2 Dimensions

Insert the following NOTE after the 3rd indent (which starts “when an LDP is used…”):

NOTE Channel and permanent link performance requirements are based on assumptions regarding the minimum length and insertion loss of cords.

Replace Table 2 **with**:

Table 2 – Zone distribution channel length equations

Model	Figure	Implementation equations		
		Class E_A	**Class F**	**Class F_A**
Interconnect – EO	10a	$Z = 107 - 3^a - F \times X$	$Z = 107 - 2^a - F \times X$	$Z = 107 - 2^a - F \times X$
Cross-connect – EO	10b	$Z = 106 - 3^a - F \times X$	$Z = 106 - 3^a - F \times X$	$Z = 106 - 3^a - F \times X$
Interconnect – LDP –EO	10c	$Z = 106 - 3^a - F \times X - L \times Y$	$Z = 106 - 3^a - F \times X - L \times Y$	$Z = 106 - 3^a - F \times X - L \times Y$
Cross-connect – LDP – EO	10d	$Z = 105 - 3^a - F \times X - L \times Y$	$Z = 105 - 3^a - F \times X - L \times Y$	$Z = 105 - 3^a - F \times X - L \times Y$

Z maximum length of the zone distribution cable (m)

F combined length of patch cords, jumpers and equipment cords (m)

L length of the LDP cable (m)

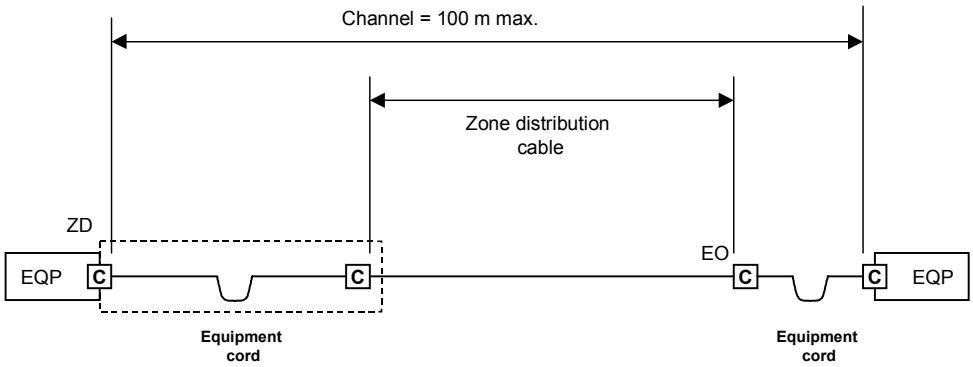
X ratio of flexible cable insertion loss (dB/m) to zone distribution cable insertion loss (dB/m) – see Clause 9

Y ratio of LDP cable insertion loss (dB/m) to zone distribution cable insertion loss (dB/m) – see Clause 9

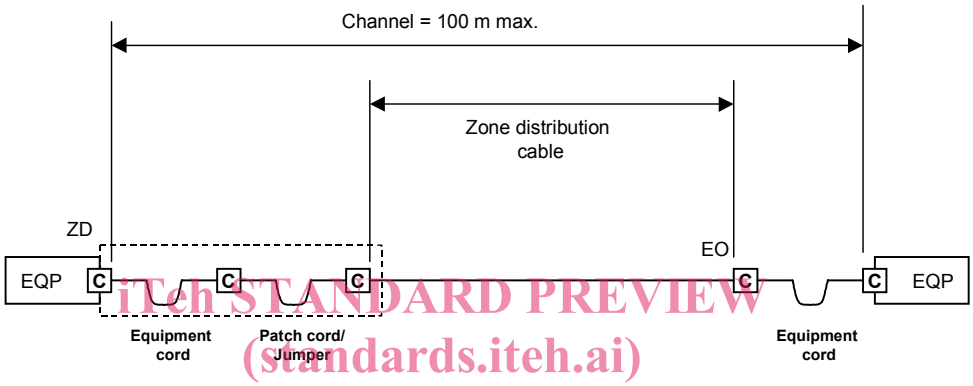
[a] This length reduction is to provide an allocated margin to accommodate insertion loss deviation.

For operating temperatures above 20 °C, Z should be reduced by 0,2 % per °C for screened cables and 0,4 % per °C (20 °C to 40 °C) and 0,6 % per °C (> 40 °C to 60 °C) for unscreened cables. Manufacturers'/suppliers' information shall be consulted where the intended operating temperature exceeds 60 °C.

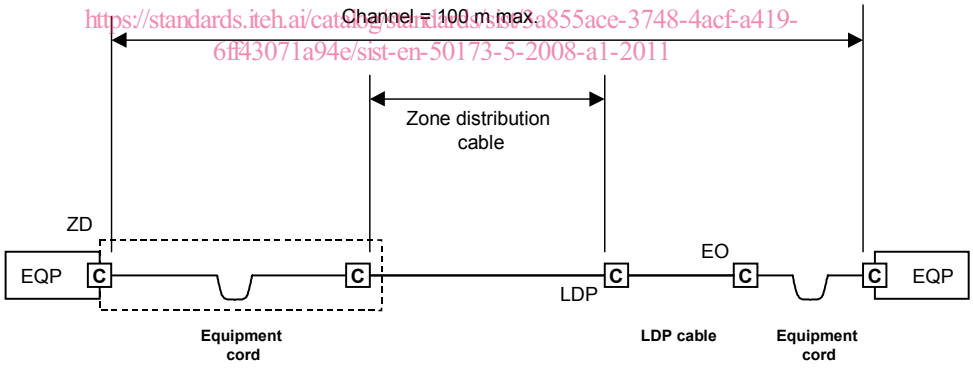
Replace Figure 10 **with**:



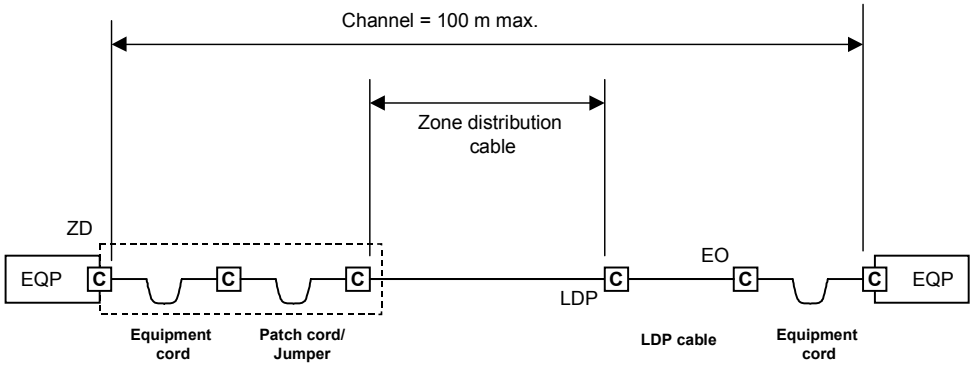
a) Interconnect – EO model



b) Cross-connect – EO model



c) Interconnect – LDP –EO model



d) Cross-connect – LDP – EO model

Figure 10 – Zone distribution cabling models

6.2.3.1 Component choice

Replace 2nd paragraph **with**:

Using the models of 6.2.3.2:

a) Category 6_A components provide Class E_A balanced cabling performance;

b) Category 7 components provide Class F balanced cabling performance;

c) Category 7_A components provide Class F_A balanced cabling performance.

6.2.3.2 Dimensions

Replace Figure 11 **with**:

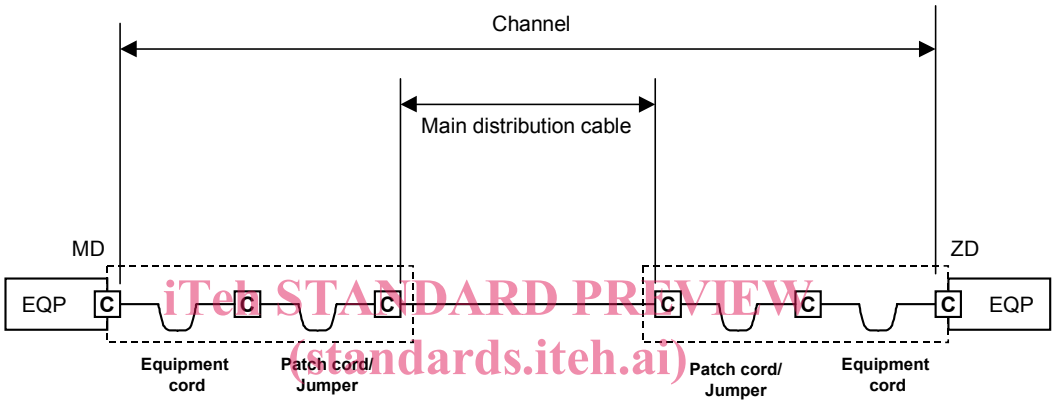


Figure 11 – Main distribution cabling model

Insert at the end of the list starting with "The following general restrictions apply" the following indent and note:

- when four connections are used in a channel, the physical length of the main distribution cable should be at least 15 m.

NOTE Channel and permanent link performance requirements are based on assumptions regarding the minimum length and insertion loss of cords.

Replace Table 3 **with**:

Table 3 – Main distribution channel length equations

Model	Implementation equations		
	Class E_A	Class F	Class F_A
Interconnect – interconnect	$M = 107 - 3^a - FxX$	$M = 107 - 2^a - FxX$	$M = 107 - 2^a - FxX$
Interconnect – cross-connect	$M = 106 - 3^a - FxX$	$M = 106 - 3^a - FxX$	$M = 106 - 3^a - FxX$
Cross-connect – cross-connect	$M = 105 - 3^a - FxX$	$M = 105 - 3^a - FxX$	$M = 105 - 3^a - FxX$
M maximum length of the main distribution cable (m) F combined length of patch cords, jumpers and equipment cords (m) X ratio of flexible cable insertion loss (dB/m) to main distribution cable insertion loss (dB/m) – see Clause 9			
[a] This length reduction is to provide an allocated margin to accommodate insertion loss deviation.			
For operating temperatures above 20 °C, M should be reduced by 0,2 % per °C for screened cables and 0,4 % per °C (20 °C to 40 °C) and 0,6 % per °C (> 40 °C to 60 °C) for unscreened cables. Manufacturers'/suppliers' information shall be consulted where the intended operating temperature exceeds 60 °C.			