SLOVENSKI STANDARD
SIST EN 50310:2016/A1:2020

01-april-2020

Izenačitev potencialov in ozemljevanje v stavbah z opremo informacijske tehnologije - Dopolnilo A1

Telecommunications bonding networks for buildings and other structures

Anwendung von Maßnahmen für Erdung und Potentialausgleich in Gebäuden mit Einrichtungen der Informationstechnik

Application de liaison équipotentielle et de la mise à la terre dans les locaux avec équipement de technologie de l'information

Ta slovenski standard je istoveten z: **EN 50310:2016/A1:2020**

ICS:

35.020	Informacijska tehnika in tehnologija na splošno	Information technology (IT) in general
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

SIST EN 50310:2016/A1:2020 **en,fr**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50310:2016/A1

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ICS 29.120.50; 91.140.50

English Version

Telecommunications bonding networks for buildings and other structures

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Anwendung von Maßnahmen für Erdung und Potentialausgleich in Gebäuden mit Einrichtungen der Informationstechnik

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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.

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

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Contents

European foreword

This document (EN 50310:2016/A1:2020) 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)	2020-12-13
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2022-12-13

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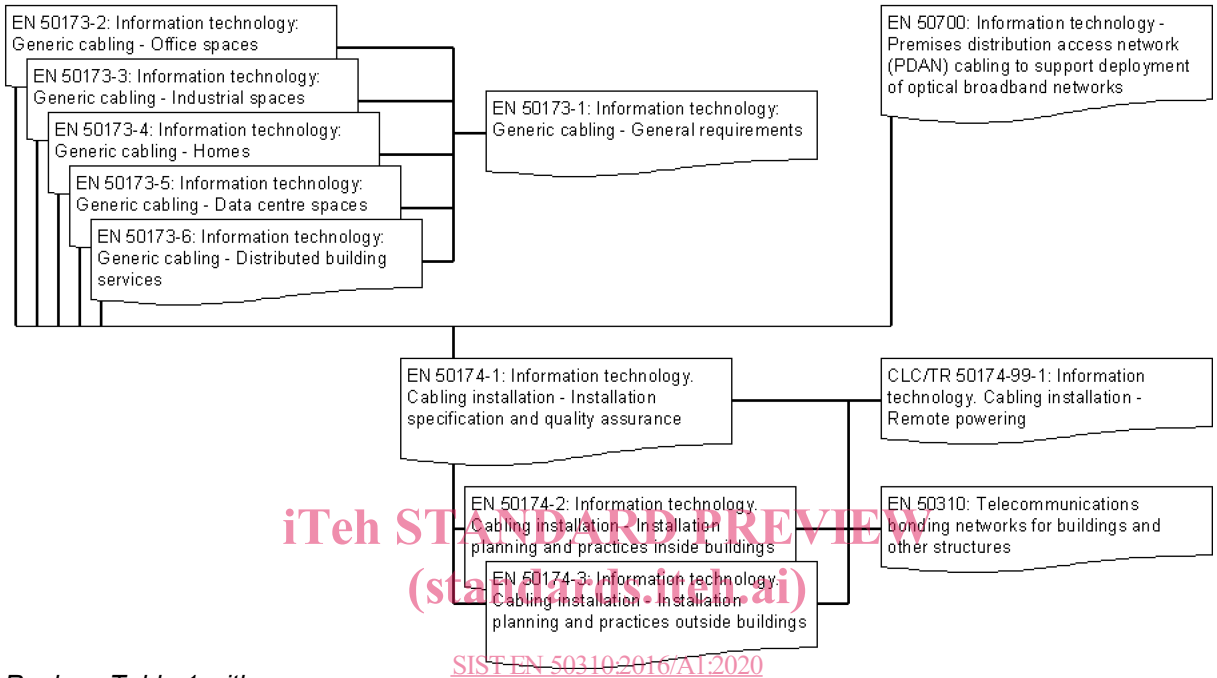
1 Modifications to the Introduction

Amend list of bullets in 4th paragraph as follows:

- *replace "*EN 50098 series*" with "*EN 50700*":*

Replace Figure 1 with



Replace Table 1 with

Building design phase	Generic cabling design phase	Specification phase	Installation phase	Operation phase
EN 50310	EN 50173-2 EN 50173-3 EN 50173-4 EN 50173-5 EN 50173-6 (these ENs reference general requirements of EN 50173-1)	EN 50174-1 **Planning phase** EN 50174-2 EN 50174-3 EN 50310	EN 50174-2 EN 50174-3 EN 50310	EN 50174-1

2 Modifications to Clause 2, Normative references

Add the following new references:

EN 61557-4, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding (IEC 61557-4)*

EN 61557-5, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 5: Resistance to earth (IEC 61557-5)*

3 Modifications to Clause 3, Terms, definitions and abbreviations

In 3.1, add the following new terms and definitions at the end of the list:

3.1.26

high frequency

frequency of, or greater than, 1 MHz

3.1.27

low frequency

frequency of less than 1 MHz

4 Modifications to Clause 4, Conformance

Add the following text at the end of the NOTE:

HD 60364-4-444 contains additional information.

5 Modifications to 6.1, Assessment of the impact of the telecommunications bonding network on the interconnection of telecommunications equipment

Replace paragraphs 2, 3 and 4 with the following:

The mesh bonding network of Clause 11 provides the most effective bonding at high frequencies and can provide effective bonding at low frequencies. It is intended to support the most demanding requirements of both cabling media and the applications supported over those media (see Table 1). In addition, it provides the most flexibility in relation to the types and locations of telecommunications equipment that may be installed (subject to the transmission performance limits of the applications when using the selected telecommunications cabling).

The installation of such a telecommunications bonding network is most easily implemented during new construction or refurbishment of a building or structure.

Within an existing building or structure:

a) the cost and complexity of installing a telecommunications bonding network that will support the requirements of applications operating over asymmetric cabling between any two points in a building may be prohibitive,

b) the implementation of an all-optical network has no implications for the telecommunications bonding network but would substantially impact on the cost of transmission and terminal equipment and may not be viable for all intended applications.

Therefore an assessment has to be made based on a balance between complexity of the telecommunications bonding network and the type of cabling media and the application supported over those media between and within the zones described in Figure 2. This assessment has also to take into consideration the transmission performance requirements of the applications when using the selected telecommunications cabling.

Following this assessment, if there are financial or technical justifications for an implementation other than that of Clause 11, then the bonding networks of Clauses 8, 9 or 10 (as appropriate) should be considered taking into account the risk of telecommunications disruption.

Any bonding approach specified in this standard is enhanced by the installation of power distribution systems conforming to TN-S as described in the HD 60364 series of standards and, in particular, HD 60364-4-444.

6 Modifications to 6.2, Telecommunications bonding networks

Replace paragraph 2 and NOTE with the following:

Where the building or structure has, or will have, lightning protection in accordance with EN 62305 series, the mesh bonded network of Clause 11 can be used in conjunction with the “integrated lightning protection system” according to EN 62305-4.

Other lightning protection systems, including the “isolated lightning protection system” according to EN 62305-3, may be used provided that specific restrictions are applied as agreed between the planners of the lightning protection system and the bonding network.

7 Modifications to 6.3.1.1, Protective bonding networks

Replace paragraph 1 with the following:

Protective bonding networks can provide adequate performance for the telecommunications infrastructure. Where a protective bonding network is found not to comply with the requirements of 6.3.2.1 and 6.3.2.2, corrective actions shall be undertaken before decisions are taken in relation to the implementation of the telecommunications bonding network.

8 Modification to 6.3.2.1, General requirements

Add the following NOTE at the end of 6.3.2.1:

NOTE The use of multiple bonding conductors as described in Clauses 7, 8, 9, 10 and 11 improves the impedance by a factor equal to the number of additional connections.

9 Modifications to Table 4 — DC resistance requirements for protective bonding networks

Replace Table 4 with the following new table:

Connections between	Requirement maximum mΩ/m [a]
Busbars in electrical distributors with a zone	2,5
Busbars in electrical distributors within adjacent zones	2,5
[a] Based on the shortest length between the two points.	

10 Modifications to Table 5 — DC resistance requirements for dedicated telecommunications bonding networks

Replace Table 5 with the following new table:

Connections between	Requirement maximum mΩ/m [a]
Any point of the bonding network and the MET	1,67
Any primary bonding busbar (PBB) and a connected secondary bonding busbar (SBB)	1,67
Any point of connection to the bonding network within a zone and the connected secondary bonding busbar (SBB)	1,67
Primary bonding busbar (PBB) or secondary bonding busbar (SBB) to structural steel	1,67
[a] Based on the shortest bonding conductor length between the two points.	

11 Modifications to 6.3.3.1, General

Replace paragraphs 1 and 2 with the following:

Tests shall be undertaken with equipment meeting the requirements of EN 61557-4 or EN 61557-5. The accuracy of the measured value shall be included with the test result documentation.

12 Modifications to 7.4.1.2, Installation

Insert the following NOTE after paragraph 3:

NOTE The separation of bonding conductors can have an impact on the space required by the associated cable management systems.

13 Modifications to 11.1, General

Replace paragraph 1 with the following text:

The mesh bonded networks provide enhanced immunity to EMI compared to that provided by the bonding networks specified in Clauses 8, 9 and 10. The objective is to provide:

— a d.c. resistance between adjacent points of the grid created by the mesh of no more than 1 mΩ (approximately);

— an inductance between adjacent points of the grid created by the mesh of no more than 6 µH (approximately).

This enhanced performance mitigates issues resulting from steady-state and transient voltages and currents generated by lightning, power systems, power circuit earth faults and EMI.

14 Modifications to 11.6, System reference potential plane

In 4th paragraph replace “EN 50174-2” *with* “EN 50174-1”