SLOVENSKI STANDARD

SIST EN 50117-4-1:2008

01-oktober-2008

Koaksialni kabli - 4-1. del: Področna specifikacija za kable za okabljenje BCT v skladu z EN 50173 - Notranji zaključni kabli za sisteme, ki delujejo v območju 5 MHz do 3.000 MHz

Coaxial cables -- Part 4-1: Sectional specification for cables for BCT cabling in accordance with EN 50173 - Indoor drop cables for systems operating at 5 MHz - 3 000 MHz

Koaxialkabel - Teil 4-1: Rahmenspezifikation für Kabel für RuK-Verkabelung nach EN 50173 - Hausinstallationskabel im Bereich von 5 MHz bis 3 000 MHz

Câbles coaxiaux -- Partie 4-1: Spécification intermédiaire pour câbles destinés au câblage BCT (Broadcast and Communication Technology) conformément à la EN 50173 - Câbles de raccordement à usage intérieur pour systèmes fonctionnant dans la plage 5 MHz - 3 000 MHz

Ta slovenski standard je istoveten z: **EN 50117-4-1:2008**

ICS:

33.120.10	Koaksialni kabli. Valovodi	Coaxial cables. Waveguides

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EUROPEAN STANDARD

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English version

Coaxial cables - Part 4-1: Sectional specification for cables for BCT cabling in accordance with EN 50173 - Indoor drop cables for systems operating at 5 MHz - 3 000 MHz

Câbles coaxiaux -
Partie 4-1: Spécification intermédiaire
pour câbles destinés au câblage BCT
(Broadcast and Communication Technology)
conformément à la EN 50173 -
Câbles de raccordement à usage intérieur
pour systèmes fonctionnant d
ans la plage 5 MHz - 3 000 MHz

Koaxialkabel -
Teil 4-1: Rahmenspezifikation
für Kabel für RuK-Verkabelung
nach EN 50173 -
Hausinstallationskabel
im Bereich von 5 MHz bis 3 000 MHz

This European Standard was approved by CENELEC on 2008-04-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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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 European Standard was prepared by SC 46XA, Coaxial cables, of Technical Committee CENELEC TC 46X, Communication cables.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50117-4-1 on 2008-04-01.

This standard is to be read in conjunction with EN 50117-1:2002.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2009-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2011-04-01

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Tables

1 Scope

This sectional specification relates to EN 50117-1: Generic specification for coaxial cables, and is to be read in conjunction with this generic standard. This specification applies to coaxial cables for BCT-cabling in accordance with EN 50173 operating at a maximum d.c. voltage of 72 V and a maximum d.c. current of 0,5 A at a temperature range between –20 °C and +60 °C [1)] and at frequencies between 5 MHz and 3 000 MHz and complying with the requirements of EN 50083.

The purpose of this European Standard is to specify the applicable test methods and requirements for the electrical, mechanical, and environmental and fire performance of the cables.

2 Normative references

The following referenced documents are indispensable for the application 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 50083 series	Cable networks for television signals, sound signals and interactive services
EN 50117-1:2002	Coaxial cables - Part 1: Generic specification
EN 50173-1	Information technology - Generic cabling systems - Part 1: General requirements
EN 50173-4	Information technology - Generic cabling systems - Part 4: Homes
EN 50289-1-6:2002	Communication cables - Specifications for test methods - Part 1-6: Electrical test methods - Electromagnetic performance
EN 50289-3-9:2001	Communication cables - Specifications for test methods - Part 3-9: Mechanical test methods - Bending tests
EN 50290-1-2	Communication cables - Part 1-2: Definitions
EN 50290-2-22	Communication cables - Part 2-22: Common design rules and construction - PVC sheathing compounds
EN 50290-2-23	Communication cables - Part 2-23: Common design rules and construction - PE insulation
EN 50290-2-25	Communication cables - Part 2-25: Common design rules and construction - Polypropylene insulation compounds
EN 50290-2-27	Communication cables - Part 2-27: Common design rules and construction - Halogen free flame retardant thermoplastic sheathing compounds
EN 50290-4-1	Communication cables - Part 4-1: General considerations for the use of cables - Environmental conditions and safety aspects
EN 50356	Method for spark testing of cables
EN 62153-1-1	Metallic communication cables test methods - Part 1-1: Electrical - Measurement of the pulse/step return loss in the frequency domain using the Inverse Discrete Fourier Transformation (IDFT) (IEC 62153-1-1)
EN 62230	Electric cables - Spark-test method (IEC 62230)
IEC 61196-1-115	Coaxial communication cables - Part 1-115: Electrical test methods - Test for regularity of impedance (pulse/step function return loss)

1) Only valid without current load.

3 Definitions

For the purposes of this document, the terms and definitions of EN 50290-1-2 and EN 50117-1 apply.

4 Requirements for cable construction

4.1 General

Designing the cable, consideration should be paid to the maximum admissible current stated in the detail specification. It is assumed that the raise of temperature of the inner conductor when submitted to the maximum current under nominal ambient conditions does not affect the mechanical and electrical properties of the cable (details are under study).

This specification covers standard applications. Other cables may be designed with respect to the MICE table depending upon agreement between customer and supplier.

4.2 Inner conductor

The conductor shall meet the requirements of EN 50117-1, 4.2, and shall be solid. Individual wires can be plain or metal coated. Dimensions shall be ≥ 0,6 mm and ≤ 1,2 mm and specified in the detail specification.

There shall be no joint made subsequent to the last drawing operation.

4.3 Dielectric

The dielectric material(s) shall be in accordance with EN 50117-1, 4.3 and shall consist of polyolefin materials, with EN 50290-2-23 (polyethylene), EN 50290-2-25 (polypropylene) or shall comply with any relevant part of EN 50290-2 series.

The diameter of the dielectric shall be ≥ 3,0 mm and ≤ 6,0 mm and shall be specified in the detail specification

4.4 Outer conductor or screen

The construction and material of the outer conductor and/or screen shall meet the requirements of EN 50117-1, 4.4, b), c), f) or g). Where option b) is used, a double braid layer is required.

For braid constructions or helically wound wires, the braid angle shall be between 15° and 45°. The coverage factor shall be greater than or equal to 65 %, or, when the cable is provided with a metal foil, greater than or equal to 25 %. These values are also valid for cables with two bi-directional layers of helically wound wires.

The diameter over the outer conductor shall be ≥ 3,5 mm and ≤ 6,5 mm and specified in the detail specification.

4.5 Filling compounds

Not applicable.

4.6 Moisture barriers

Not applicable.

4.7 Wrapping layers

Not applicable.

4.8 Sheath

Sheath material(s) shall meet the requirements of EN 50290-2-22 for PVC sheaths or EN 50290-2-27 for halogen free flame retardant materials.

The sheath shall also meet the requirements of EN 50117-1, 4.8.

The diameter over the outer sheath shall ≤ 11,0 mm and specified in the detail specification.

4.9 Metallic protection

Not applicable.

4.10 Cable integral suspension strand (messenger wire)

Not applicable.

4.11 Oversheath

Not applicable.

4.12 Fauna proofing

Not applicable.

4.13 Chemical and/or environmental proofing

Not applicable.

4.14 Cable identification

Cable identification shall be in accordance with EN 50117-1, 4.14.

4.14.1 Sheath marking

Unless otherwise specified in the detail specification sheath marking shall be achieved as a non-degradable print containing the following minimum information:

– designation of the cable;
– attenuation value (in dB/100 m at 800 MHz, rounded);
– screening class;
– Euro-class;
– name of supplier.

EXAMPLE EN 50117-4-1 21 < XXX > Class B Euro-class C < YYY >

NOTE The Construction product directive (CPD) will define classes for the fire performance of cables. As long as the CPD is under consideration and fire performance classes (Euroclasses) are not defined, sheath marking with Euroclass is not required.

4.14.2 Labelling

Unless otherwise specified in the detail specification drums or coils shall be provided with a label with a non-degradable print containing the following minimum information:

– designation of the cable;
– attenuation value (in dB/100 m at 800 MHz, rounded);
– screening class;
– Euro-class;
– name of supplier;
– batch part number;
– length of cable.

EXAMPLE EN 50117-4-1 21 < XXX > Class B Euro-class C < YYY > 03/04 543 m

NOTE The Construction product directive (CPD) will define classes for the fire performance of cables. As long as the CPD is under consideration and fire performance classes (Euroclasses) are not defined, sheath marking with Euroclass is not required.

5 Tests for completed cables

When tested in accordance with the requirements of EN 50117-1, the requirements given below shall apply.

5.1 Electrical tests

5.1.1 Low-frequency and d.c. electrical measurements

Table 1 – Low-frequency and d.c. electrical measurements

EN 50117-1 Subclause n°	Parameter	Requirements/Remarks
5.1.1.1	Conductor resistance	Applicable, value in accordance with the detail specification
	Loop resistance	≤ 90 Ω/km
5.1.1.2	Dielectric strength	2 kV d.c. or 1,5 kV a.c. for 1 min
5.1.1.3	Insulation resistance	≥ 10^4 MΩ x km
5.1.1.4	Mutual capacitance	When required, in accordance with the relevant detail specification
5.1.1.5	Spark test of sheath	2,5 kV a.c. or 3,75 kV d.c., unless otherwise specified in the relevant detail specification. HF or pulsed voltages may be applied when specified in their relevant detail specification. Test in accordance with EN 62230
5.1.1.6	Discharge (corona) test	Not applicable
5.1.1.7	Voltage proof	Not applicable
5.1.1.8	Power rating	Not applicable