SLOVENSKI STANDARD
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Coaxial cables used in cabled distribution networks - Part 2: Sectional specification for indoor drop cables

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Koaxialkabel für Kabelverteilanlagen -- Teil 2: Rahmenspezifikation für Hausinstallationskabel

Câbles coaxiaux pour réseaux câblés de distribution -- Partie 2: Spécification intermédiaire pour câbles de raccordement à usage intérieur

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English version

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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 Subcommittee SC 46XA, Coaxial cables, of the Technical Committee CENELEC SC 46X, Communication cables.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50117-2 on 1995-07-04.

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) 1996-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-07-01

1 Scope

This Sectional Specification is intended to be used in conjunction with the Generic Specification EN 50117-1, Coaxial cables for use in cabled distribution networks operating at frequencies between 5 MHz and 862 MHz.

This Sectional Specification applies to drop cables for indoor applications.

The purpose of the standard is to specify values and preferential characteristics of the cables, and to identify the applicable tests from the Generic Specification. Reference is made to suitable schemes for Quality Assessment.

The numbering of the clauses is the same as in the Generic Specification. **All the clauses from the Generic Specification are applicable unless otherwise stated in this Sectional Specification.** Any variations from the Generic Specification are also detailed in this specification.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 50117-1	Coaxial cables used in cabled distribution networks - Part 1: Generic specification
HD 624.2	Materials used in communication cables Part 2: PVC sheathing compounds
HD 624.6	Part 6: Halogen free flame retardant insulation compounds
HD 624.7	Part 7: Halogen free flame retardant thermoplastic sheathing compounds

3 Definitions

Terminology, units of measure, and symbols, are the same as in the Generic Specification.

4 Materials and cable construction

4.3 *Dielectric*

Unless otherwise specified, nominal cable diameter over the dielectric should preferably be selected from the following :

3,7 mm 4,8 mm 7,2 mm

4.4 *Outer conductor or screen*

The braid angle according to 3.2.2.1 shall be between 15° and 45°. The coverage factor according to 3.2.2.4 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 bidirectional layers of helically wound wires.

4.5 *Sheath*

The sheath of cables covered by this Sectional Specification shall be in PVC, or flame retardant materials, including halogen free materials.

6 Identification marking and labelling

6.2 *Sheath marking*

Cables shall be marked on the outer sheath with

(i) Cable type
(ii) Supplier identification

at least once per metre.

Additional marking is permissible provided (i) and (ii) above are clearly identifiable. Sheath marking shall not be easily removable (preferably via the use of embossing or ink).

9 Materials and cable construction tests

9.4 *Ovality*

Not applicable.

9.6 *Tensile strength and elongation after break for metals*

Applicable only for copper inner conductors.

9.7 *Tensile strength and elongation at break for metals*

Applicable only for copper clad steel inner conductors.

9.8 *Torsion test for copper clad metals*

Applicable only for copper clad steel inner conductors.

9.9 *Tensile strength and elongation for plastics*

Applicable on the outer sheath of the cable.

Requirements

Plastic materials used in the construction of these cables shall meet the requirements of HD 624 as follows;

PVC sheathing compounds	HD 624.2
Halogen free flame retardant insulation compounds	HD 624.6
Halogen free flame retardant thermoplastic sheathing compounds	HD 624.7

10 Tests for mechanical and thermal characteristics

10.1 *Adhesion of dielectric*

The test shall be performed to determine the value of the adhesion of the dielectric to the inner conductor.

The application of this test on semi air spaced cables is under consideration.

The adhesion of the dielectric to the inner conductor, Fa, shall be given in MPa by the following:

$$Fa = F/(\Pi * d * l)$$

where Fa is in MPa

F is the strip force in Newtons
d is the diameter of the inner conductor in mm
l is the length of the sample in mm

Requirements

The maximum value shall be 1,0 MPa.
The minimum value shall be 0,1 MPa.
Where the diameter of the inner conductor is smaller than 1,6 mm the test shall be performed on a 25 mm sample length (l). Otherwise it shall be performed on a 50 mm sample length.

10.2 *Bending*

10.2.1 *Multiple bending*

Not applicable.

10.4 *Crush resistance of cable*

Applicable with an applied load of F = 700 N.
Testing will be done in accordance with 11.9.2 with a rise time of ≤ 1 ns.

After a recovery time of no more than 5 min the maximum irregularity shall be less than 1 %.

10.5 *Vibration test for aerial figure eight cables*

Not applicable.

10.6 *Climatic tests*

10.6.1 *Climatic sequence*

Not applicable.

11 Electrical Characteristics - Measurement and test methods

11.2 *Insulation resistance*

Applicable.

Requirement

The insulation resistance shall be not less than 10^4 MΩ.km.

11.3 *Voltage test of dielectric*

Applicable with a voltage of 2 kV d.c. or 1,5 kV a.c. rms.

11.5 *Characteristic impedance*

11.5.1 *Mean characteristic impedance*

The mean characteristic impedance shall be 75 Ω ± 3 Ω.

11.6 *Return loss*

Applicable, with required values in accordance with the following table:

	5 - 30 MHz	30 - 470 MHz	470 - 862 MHz
$a \leq 18$ dB/100 m	23 dB	23 dB	20 dB
$a > 18$ dB/100 m	20 dB	20 dB	18 dB

NOTE: a is the longitudinal loss at 800 MHz
In each frequency band, 3 peak values up to 4 dB lower than the specified limit are permissible.

11.7 *Relative propagation velocity (velocity ratio)*

The value may be given in the Detail Specification for information.