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REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Coaxial communication cables –
Part 6-1: Blank detail specification for CATV drop cables

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FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 61196-6-1:2009. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 61196-6-1 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Annex A, Cable identification and marking was added.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
46A/1497/FDIS	46A/1515/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

A list of all the parts in the IEC 61196 series, published under the general title *Coaxial communication cables*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

It is to be used in conjunction with IEC 61196-1:2005 and IEC 61196-6:2021

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

COAXIAL COMMUNICATION CABLES –

Part 6-1: Blank detail specification for CATV drop cables

1 Scope

This blank detail specification applies to ~~CATV~~ coaxial communication cables as described in IEC 61196-6. It specifies the requirements for drop cables for use in cabled television distribution networks operating at temperatures between −40 °C and +70 °C and in the frequency range from 5 MHz to 1 000 MHz or from 5 MHz to 3 000 MHz ~~as described in IEC 61196-6 and is to be read in conjunction with IEC 61196-1 and IEC 61196-6~~.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 61196-1:2005, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

IEC 61196-6:2021, *Coaxial communication cables – Part 6: Sectional specification for CATV drop cables*

IEC 61196-1-310, *Coaxial communication cables − Part 1-310: Mechanical test methods − Test for torsion characteristics of copper-clad metals*

IEC 61196-1-314:2015, *Coaxial communication cables – Part 1-314: Mechanical test methods – Test for bending*

~~IEC 62153-4-4, *Metallic communication cable test methods – Part 4-4: Electromagnetic compatibility (EMC) – Shielded screening attenuation, test method for measuring of the screening attenuation "a_s" up to and above 3 GHz.*~~

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 Guidance for preparation of a detail specification

The detail specification shall be written in accordance with the layout of the pro-forma blank detail specification that forms part of this document.

~~NOTE~~ When a characteristic does not apply, in accordance with IEC 61196-6, then NA (for Not Applicable) shall be entered in the appropriate space.

When a characteristic applies but a specific value is considered not necessary, then NS (for Not Specified) shall be entered in the appropriate space.

When NS is used, the appropriate requirement in the sectional specification shall apply.

The numbers shown in brackets on this and the following pages correspond to the following items of required information, which should be entered in the spaces provided.

[1] Name and address of the manufacturer of the cable
[2] IEC document number and date of issue
[3] Related IEC documents
[4] Product type/model of cable
[5] Any other reference standards (International, National, etc.) to the cable
[6] Parameter or characteristic of the cable
[7] Reference to the relevant subclause of the sectional specification
[8] Manufacturer specification of the cable
[9] Minimum requirements defined within the generic or sectional specification
[10] Manufacturer to insert any additional test parameters, methods, specifications, etc.

5 Blank detail specification

[1] Manufacturer and address:	**[2] Issue: IEC 61196-6-1** **Date:**
	[3] Generic specification: IEC 61196-1 **Sectional specification: IEC 61196-6**
[4] Product type/model:	**[5] Additional references:**

[6] Parameter or characteristic Cable construction (dimensions in mm)	[7] IEC 61196-6 Clause/Subclause	[8] Manufacturer specification	[9] Minimum requirement
Inner conductor	4.2		
Material	4.2.1		NS
Diameter	4.2.2		NS
Tolerance	4.2.2		± 0,03 mm
Dielectric	4.3		
Material	4.3		NS
Diameter	4.3		NS
Tolerance	4.3		± 0,15 mm
Outer conductor	4.4		
Type and construction	4.4		NS
Material	4.4		NS
Diameter	4.4		NS
Tolerance	4.4		± 0,20 mm
Sheath or jacket	4.5		NS
Material	4.5		NS
Thickness	4.5		NS
Diameter	4.5		NS
Tolerance	4.5		± 0,25 mm
Integral messenger	4.5		
Material	4.5		NS
Diameter	4.5		NS
Minimum tensile strength (kgf)	4.5		NS
Elongation	4.5		NS
Corrosion properties	4.5		NS
Additional information			
Overall dimension (width) of cable	4.6		NS
Standard ratings and characteristics	5		NS
Cable identification and markings	6		~~As defined in 6.1.1 of IEC 61196-6~~ According to Annex A
NS: Not specified NA: Not applicable			

[6] Parameter or characteristic Completed cable tests	[7] IEC 61196-6 Clause/Subclause	[8] Manufacturer specification	[9] Minimum requirement
Electrical testing of finished cable	7.2		
Conductor resistance: Inner conductor Outer conductor Loop (outer + inner)	7.2.1.1		NS
Insulation resistance	7.2.1.2		≥10^4 MΩ × km
Withstand voltage of dielectric	7.2.1.3		2 kV DC or 1,5 kV AC for 1 min See Note 1
Withstand voltage of sheath	7.2.1.4		3,5 kV DC or 2,5 kV AC for 1 min See Note 1
Current carrying capacity	7.2.1.5		NS
Spark test	7.2.1.6		2,5 kV AC or 3,75 kV DC, or pulse, or 3,5 kV HF
High-frequency electrical and transmission measurements	7.2.2		
Operational frequency			5 MHz to 1 000 MHz or 5 MHz to 3 000 MHz
Characteristic impedance	7.2.2.1		75 Ω ± 3 Ω
Relative propagation velocity (velocity ratio)	7.2.2.2		NS
Return loss (uniformity of impedance)	7.2.2.3		5 MHz to 1 000 MHz: ≥ 20 dB; 1 000 MHz to 2 000 M Hz: ≥ 18 dB; 2 000 MHz to 3 000 MHz: ≥ 16 dB The measurement inaccuracy $\Delta a_{r,f}$ shall be < 1 dB.
Attenuation constant, α	7.2.2.4		$\alpha = a + \sqrt{f} + b \times f + c$ or for copper clad conductors $\alpha = a + \sqrt{f} + b \times f + c + d/\sqrt{f}$ a=___, b=___, c=___ and if applicable d=___ Refer to Annex B for discrete values at 200 MHz and 800 MHz
Regularity of impedance	7.2.2.5		≥ 40 dB resp ≤ 1 %
Transfer impedance ~~after flex note 2~~	7.2.2.6		Screening class ~~"C"~~ "_" according to IEC 61196-6
Screening attenuation ~~after flex note 2 according to test procedure~~	7.2.2.7		Screening class ~~"C"~~ ~~IEC 62153-4-4 (triaxial method)~~ "_" according to IEC 61196-6

[6] Parameter or characteristic Completed cable tests	[7] IEC 61196-6 Clause/Subclause	[8] Manufacturer specification	[9] Minimum requirement
~~Screening class~~ ~~note 2~~	~~7.1.2.6 and 7.1.2.7~~		~~See IEC 61196-6, Table 2~~
NS: Not specified NA: Not applicable			