IEC 61196-6-1

Edition 2.0 2021-08

INTERNATIONAL STANDARD

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

IEC 61196-6-1:2021-08(en)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, …). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC online collection - oc.iec.ch
Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org
The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 18 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC 61196-6-1

Edition 2.0 2021-08

INTERNATIONAL STANDARD

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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.120.10

ISBN 978-2-8322-1015-5

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

____

COAXIAL COMMUNICATION CABLES –

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

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.

2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.

3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.

5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.

6) All users should ensure that they have the latest edition of this publication.

7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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.

COAXIAL COMMUNICATION CABLES –

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

1 Scope

This blank detail specification applies to 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.

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*

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.

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

<table>
<tr><td rowspan="2">[1] Manufacturer and address:</td><td>[2] Issue: IEC 61196-6-1
Date:</td></tr>
<tr><td>[3] Generic specification: IEC 61196-1
Sectional specification: IEC 61196-6</td></tr>
<tr><td>[4] Product type/model:</td><td>[5] Additional references:</td></tr>
</table>

[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		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	7.2.2.6		Screening class "_" according to IEC 61196-6
Screening attenuation	7.2.2.7		Screening class "_" according to IEC 61196-6
NS: Not specified NA: Not applicable			