

INTERNATIONAL STANDARD

Coaxial communication cables –
Part 5: Sectional specification for CATV trunk and distribution cables

IEC 61196-5:2018
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CONTENTS

FOREWORD.....	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	7
4 Materials and cable construction	7
4.1 Cable construction	7
4.2 Inner conductor	7
4.2.1 Conductor material	7
4.2.2 Conductor construction	7
4.3 Dielectric	8
4.4 Outer conductor or screen	8
4.5 Sheath	8
4.6 Completed cable	9
5 Standard ratings and characteristics	9
6 Identification and marking	9
6.1 Cable identification	9
6.2 Cable marking	9
6.3 Labelling	9
7 Tests for completed cables	9
7.1 General	9
7.2 Electrical testing of the finished cable	9
7.3 High-frequency electrical and transmission test procedures and requirements	10
7.4 Environmental test procedures and requirements of the finished cable	11
7.5 Test procedures and requirements of mechanical characteristics of the finished cable	12
7.6 Fire performance	13
8 Quality assessment	13
9 Delivery and storage	13
Annex A (informative) Cable types	14
Table 1 – Low-frequency and DC test procedures and requirements	10
Table 2 – High-frequency electrical and transmission test procedures and requirements	10
Table 3 – Environmental test procedures and requirements of the finished cable	11
Table 4 – Test procedures and requirements of mechanical characteristics of the finished cable	12
Table 5 – Fire performance requirements	13
Table A.1 – Distribution and trunk cables – Preferred nominal dimensions and ratings	14

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COAXIAL COMMUNICATION CABLES –

**Part 5: Sectional specification for CATV trunk
and distribution 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.
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International Standard IEC 61196-5 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.

This third edition cancels and replaces the second edition published in 2012. This edition constitutes a technical revision.

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

- a) 1 Scope: revised, frequency range extended to 2 000 MHz;
- b) 4.3 Dielectric: life expectancy of the dielectric is proved by oxidative induction time (OIT) test before and after ageing according to IEC 60811-410;
- c) Annex A: Table A.1, Cable types added.

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

FDIS	Report on voting
46A/1351/FDIS	46A/1357/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This International Standard is to be used in conjunction with IEC 61196-1:2005.

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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.

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COAXIAL COMMUNICATION CABLES –

Part 5: Sectional specification for CATV trunk and distribution cables

1 Scope

This part of IEC 61196, which is a sectional specification, applies to coaxial cables for analogue and digital one- and two-way signal transmission, e.g. for cable networks for television signals, sound signals and interactive services in accordance with IEC 60728-1, IEC 60728-1-1, IEC 60728-101, IEC 60728-10, ISO/IEC 11801-1 and ISO/IEC 11801-4. This includes also the transmission of BCT signals provided by a CATV, MATV or SMATV cable networks.

This document specifies the test procedures and requirements for trunk and distribution cables for temperatures between –40 °C and +65 °C and in the frequency range of 5 MHz to 2 000 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.

- <https://standards.iteh.ai/catalog/standards/sist/22e7ed9b-e0df-4b33-820e-34cc0195a801/iec-61196-5-2018>
IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*
- IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*
- IEC 60096-0-1, *Radio Frequency cables – Part 0-1: Guide to the design of detail specifications – Coaxial cables*
- IEC 60728-1, *Cable networks for television signals, sound signals and interactive services – Part 1: System performance of forward paths*
- IEC 60811-410, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 410: Miscellaneous tests – Test method for copper-catalyzed oxidative degradation of polyolefin insulated conductors*
- IEC 60811-605, *Electric and optical fibre cables – Test methods for non-metallic materials Part 605: Physical tests – Measurement of carbon black and/or mineral filler in polyethylene compounds*
- IEC 61196-1:2005, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*
- IEC 61196-1-1, *Coaxial communication cables – Part 1-1: Capability approval for coaxial cables*
- IEC 61196-1-101, *Coaxial communication cables – Part 1-101: Electrical test methods – Test for conductor d.c. resistance of cable*

IEC 61196-1-102, *Coaxial communication cables – Part 1-102: Electrical test methods – Test for insulation resistance of cable dielectric*

IEC 61196-1-105, *Coaxial communication cables – Part 1-105: Electrical test methods – Test for withstand voltage of cable dielectric*

IEC 61196-1-106, *Coaxial communication cables – Part 1-106: Electrical test methods – Test for withstand voltage of cable sheath*

IEC 61196-1-108, *Coaxial communication cables – Part 1-108: Electrical test methods – Test for characteristic impedance, phase and group delay, electrical length and propagation velocity*

IEC 61196-1-112, *Coaxial communication cables – Part 1-112: Electrical test methods – Test for return loss (uniformity of impedance)*

IEC 61196-1-113, *Coaxial communication cables – Part 1-113: Electrical test methods – Test for attenuation constant*

IEC 61196-1-115, *Coaxial communication cables – Part 1-115: Electrical test methods – Test for regularity of impedance (pulse/step function return loss)*

IEC 61196-1-201, *Coaxial communication cables – Part 1-201: Environmental test methods – Test for cold bend performance of cable*

IEC 61196-1-203, *Coaxial communication cables – Part 1-203: Environmental test methods – Test for water penetration of cable*

IEC 61196-1-206, *Coaxial communication cables – Part 1-206: Environmental test methods – Climatic sequence*

IEC 61196-1-209, *Coaxial communication cables – Part 1-209: Environmental test methods – Thermal ageing*

IEC 61196-1-301, *Coaxial communication cables – Part 1-301: Mechanical test methods – Test for ovality*

IEC 61196-1-302, *Coaxial communication cables – Part 1-302: Mechanical test methods – Test for eccentricity*

IEC 61196-1-308, *Coaxial communication cables – Part 1-308: Mechanical test methods – Test for tensile strength and elongation for copper-clad metals*

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

IEC 61196-1-313, *Coaxial communication cables – Part 1-313: Mechanical test methods – Adhesion of dielectric and sheath*

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

IEC 61196-1-316, *Coaxial communication cables – Part 1-316: Mechanical test methods – Test of maximum pulling force of cable*

IEC 61196-1-317, *Coaxial communication cables – Part 1-317: Mechanical test methods – Test for crush resistance of cable*

IEC 61196-1-324, *Coaxial communication cables – Part 1-324: Mechanical test methods – Test for abrasion resistance of cable*

IEC 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 62153-4-3, *Metallic communication cable test methods – Part 4-3: Electromagnetic compatibility (EMC) – Surface transfer impedance – Triaxial method*

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

EN 50289-4-17, *Communication cables – Specifications for test methods – Part 4-17: Test methods for UV resistance evaluation of the sheath of electrical and optical fibre cable*¹

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61196-1 and IEC 60728-1 apply.

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 Materials and cable construction

4.1 Cable construction

The cable construction shall be in accordance with Subclauses 4.2 to 4.6 and the requirements stated in the relevant detail specification.

4.2 Inner conductor

4.2.1 Conductor material

Subclause 4.4.1 of 61196-1:2005 applies. The conductor material shall be as stated in the relevant cable detail specification.

4.2.2 Conductor construction

The conductor shall consist of a single strand or tube.

In addition, 4.4.1 of IEC 61196-1:2005 applies.

The centre conductor diameter shall be stated in the relevant detail specification. The tolerance on the centre conductor shall be $\pm 0,03$ mm for conductors with a diameter ≤ 4 mm.

¹ An IEC test procedure for UV stability is under consideration.