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Edition 1.0 2017-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Hybrid telecommunication cables – Part 1: Generic specification

Câbles de télécommunication hybrides – Partie 1: Spécification générique

IEC 62807-1:2017-09(en-fr)

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HYBRID TELECOMMUNICATION CABLES –

Part 1: Generic specification

FOREWORD

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International Standard IEC 62807-1 has been prepared by subcommittee 46C: Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories.

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

FDIS	Report on voting
46C/1078/FDIS	46C/1081/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.

A list of all parts in the IEC 62807 series, published under the general title *Hybrid telecommunication 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- withdrawn,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.

HYBRID TELECOMMUNICATION CABLES –

Part 1: Generic specification

1 Scope

This part of IEC 62807 is applicable to hybrid cables intended to contain any combination of optical fibres, twisted pair/quad, coaxial and current-carrying electrical conductor elements as required under a common outer sheath.

This hybrid cable design is convenient for networks and customer premises wiring that transmit data, telecommunication and signalling services over optical fibre, metallic twisted pairs, and/or broadband data over coaxial units, and retains the option of supplying electrical current to remote equipment.

The cable element (e.g. coaxial, balanced and optical fibre) performance requirements and supported applications are as specified in the following standards series: IEC 61196, IEC 61156, and IEC 60794 respectively.

The various combinations of strength members, sheath materials, fibre arrangements, twisted pair/quad structure, cable shielding, and current carrying conductors will be specified in the following specifications:

– IEC 62807-2[1];
– IEC 62807-3[2].

In IEC 62807 (all parts), the current carrying conductors are not intended to be used as power mains supply. The specific use and safety regulation requirements are defined in the detailed and sectional cable specification.

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 60050-461, *International Electrotechnical Vocabulary – Part 461: Electric cables*

IEC 60050-731, *International Electrotechnical Vocabulary – Part 731: Optical fibre communication*

IEC 60794 (all parts), *Optical fibre cables*

IEC 60794-1 (all parts), *Optical fibre cables – Part 1:Generic specifications*

IEC 60794-1-23, *Optical Fibres – Part 1-23: Generic specification – Basic optical cable test procedures – Cable element test methods*

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1 Under preparation.

2 Under preparation.

IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*

IEC 61156-1 (all parts), *Multicore and symmetrical pair/quad cables for digital*

IEC 61156-1:2007, *Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification*

IEC 61196 (all parts), *Coaxial communications cables*

IEC 61196-1 (all parts), *Coaxial communications cables – Part 1: Electrical test methods*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-461, IEC 60050-731, IEC 61196-1 (all parts), IEC 61156-1 (all parts), and IEC 60794-1 (all parts) 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 Fibre elements graphical symbols, terminology and abbreviations

As defined in IEC TR 61931.

5 Material requirements

Optical fibre element material requirements shall be per the relevant clauses in IEC 60794-1-23, twisted pair/quad material requirements shall be per Clause 5 of IEC 61156-1:2007 and the coaxial element material requirements shall be per the relevant clauses in IEC 61196-1.

Mixed conductor elements and the overall hybrid cable material requirements shall be defined in the detailed specification and in accordance with the safety requirements as required by the specific application.

Additional materials may be defined in the detailed specification.

6 Design and construction

The structure of optical fibre elements shall comply with IEC 60794 (all parts), the structure of internal twisted pair/quad elements shall comply with IEC 61156 (all parts), and the structure of internal coaxial elements intended for communication/data use structure shall comply with IEC 61196 (all parts).

Any other structure of metallic or optical fibre internal elements that does not refer to any of the above IEC standards shall be defined in the detailed cable specification and shall comply with the specific application safety requirements.

7 Test methods

Self-contained (sheathed) inherent optical fibre/twisted pair/coaxial internal elements shall be tested as per the relevant clause of IEC 60794 (all parts), IEC 61156 (all parts) and IEC 61196 (all parts).

Mixed conductor elements shall be tested as defined in the detailed specification and in accordance with the safety requirements as defined by the specific application.

The overall hybrid cable is to be tested as defined in the detailed specification and in accordance with the safety requirements as defined by the specific application.

Bibliography

IEC 60794-1-1, *Optical fibre cables – Part 1-1: Generic specification – General*

IEC TR 61931, *Fibre optic – Terminology*

IEC TR 62000, *Guidance for combining different single-mode fibres types*

IEC TR 62152, *Transmission properties of cascaded two-ports or quadripols – Background of terms and definitions*

IEC TR 62222, *Fire performance of communication cables installed in buildings*

IEC TR 62283, *Optical fibres – Guidance for nuclear radiation tests*

IEC TR 62362, *Selection of optical fibre cable specifications relative to mechanical, ingress, climatic or electromagnetic characteristics – Guidance*

IEC TR 62470, *Guidance on techniques for the measurement of the coefficient of friction (COF) between cables and ducts*

IEC TR 62690, *Hydrogen effects in optical fibre cables – Guidelines*

IEC TR 62691, *Optical fibre cables – Guidelines to the installation of optical fibre cables*

IEC 62807-2, *Hybrid telecommunication cables – Part 2: Indoor hybrid cables – Sectional specification*[3]

IEC 62807-3, *Hybrid telecommunication cables – Part 3: Outdoor hybrid cables – Sectional specification*[4]

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

ISO/IEC 24702, *Information technology – Generic cabling – Industrial premises*

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3 Under preparation.

4 Under preparation.