



# DRAFT TANZANIA STANDARD

(Draft for comments only)

---

Hybrid telecommunication cables - Part 1: Generic specification

**TANZANIA BUREAU OF STANDARDS**

---

## 1 National Foreword

This draft Tanzania Standard is being prepared by the Telecommunications and Information Technology Technical Committee, under the supervision of the Electrotechnical divisional standards committee (EDC)

This draft Tanzania Standard is an adoption of the International Standard **IEC 62807-1:2017** *Hybrid telecommunication cables - Part 1: Generic specification*, Which has been prepared by the International Electrotechnical Commission

## 2 Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania standards; attention is drawn especially to the following: -

- 1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.
- 2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Hybrid telecommunication cables –  
Part 1: Generic specification**

**Câbles de télécommunication hybrides –  
Partie 1: Spécification générique**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

**Warning! Make sure that you obtained this publication from an authorized distributor.**  
**Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

Draft for Stakeholders' Comments only

## CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions.....	6
4 Fibre elements graphical symbols, terminology and abbreviations.....	6
5 Material requirements.....	6
6 Design and construction .....	6
7 Test methods.....	7
Bibliography .....	8

Draft for Stakeholders' Comments only

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HYBRID TELECOMMUNICATION CABLES – Part 1: Generic specification****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.

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.

Draft for Stakeholders' Comments only

## 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<sup>1</sup>;
- IEC 62807-3<sup>2</sup>.

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*

<sup>1</sup> Under preparation.

<sup>2</sup> 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.

Draft for Stakeholders' Comments only