DRAFT TANZANIA STANDARD

(Draft for comments only)

Optical fibre cables - Part 1-2: Generic specification Basic optical cable test procedures - General guidance

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 60794-1-2:2017 Optical fibre cables - Part 1-2: Generic specification Basic optical cable test procedures - General guidance, 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

Optical fibre cables –
Part 1-2: Generic specification – Basic optical cable test procedures –
General guidance

Câbles à fibres optiques –
Partie 1-2: Spécification générique – Procédures fondamentales d’essais des câbles optiques – Lignes directrices générales
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES –
Part 1-2: Generic specification –
Basic optical cable test procedures –
General guidance

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.

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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 60794-1-2 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This fourth edition cancels and replaces the third edition published in 2013 and IEC 60794-1-20 published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition and to IEC 60794-1-20:

a) the multiple cross-reference tables have been deleted and replaced with a higher level one related to the generic standards;
b) all pertinent text from IEC 60794-1-20 has been included;
c) standard optical test wavelengths have been introduced;
d) this document has been streamlined by cross-referencing IEC 60794-1-1;
e) the "No change in attenuation" definitions contained in IEC 60794-1-20 have been transferred to IEC 60794-1-1;
f) the title has been modified to reflect the contents of the new edition.

This International Standard is to be used in conjunction with IEC 60794-1-1:2015.

The text of this standard is based on the following documents:

<table>
<thead>
<tr>
<th>FDIS</th>
<th>Report on voting</th>
</tr>
</thead>
<tbody>
<tr>
<td>86A/1767/FDIS</td>
<td>86A/1775/RVD</td>
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</table>

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

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

A list of all parts in the IEC 60794 series, published under the general title *Optical fibre cables*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

IEC 60794-1-2:2013 comprised a detailed cross-reference table to the new document set, and general guidance was given in IEC 60794-1-20. These two specifications have been combined in this document, which allows for IEC 60794-1-20 to be withdrawn.
1 Scope

This part of IEC 60794-1 applies to optical fibre cables for use with telecommunications equipment and devices employing similar techniques, and to cables having a combination of both optical fibres and electrical conductors.

The prime objective of this document is to provide the end user with an overview about the content of different parts of the IEC 60794-1 series numbered -2X. Table 1 shows the different parts.

<table>
<thead>
<tr>
<th>Test methods</th>
<th>IEC reference</th>
</tr>
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<tbody>
<tr>
<td>General guidance</td>
<td>IEC 60794-1 -2</td>
</tr>
<tr>
<td>Methods E – Mechanical</td>
<td>IEC 60794-1 -21</td>
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<td>Methods F – Environmental</td>
<td>IEC 60794-1 -22</td>
</tr>
<tr>
<td>Methods G – Cable elements</td>
<td>IEC 60794-1 -23</td>
</tr>
<tr>
<td>Methods H – Electrical</td>
<td>IEC 60794-1 -24</td>
</tr>
</tbody>
</table>

NOTE Several numbers in the test method numbering sequence are missing. The reasons for these omissions are historical. To avoid confusion, the existing numbering sequence has been retained.

These documents define test procedures to be used in establishing uniform requirements for the geometrical, transmission, material, mechanical, ageing (environmental exposure) and climatic properties of optical fibre cables, and electrical requirements where appropriate.

Throughout the documents, the wording "optical cable" can also include optical fibre units, microduct fibre units, etc.

The secondary objective of this document is to provide the end user with useful guidance when testing optical fibre cables.

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 60793 -1- 46, Optical fibres – Part 1-46: Measurement methods and test procedures – Monitoring of changes in optical transmittance
3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60794-1 apply.

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

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

4 General guidance

4.1 Test procedure format

The standard descriptive order of each test method is in general as follows: object, sample, apparatus, procedure, requirement, details to be specified, details to be reported. Additional clauses may be inserted, whilst maintaining this general order.

4.2 Standard atmospheric conditions

Two sets of allowable ambient conditions for cable testing are defined for use in testing in this document:

**Standard test conditions**
- Temperature: +23 °C ± 5 °C
- Pressure: site ambient
- Relative humidity: 20 % to 70 %

**Expanded test conditions**
- Temperature: +25 °C ± 15 °C
- Pressure: site ambient
- Relative humidity: 5 % to 95 %

Unless otherwise stated in the particular test, the expanded test conditions shall be used as the default atmospheric conditions when performing tests. The standard test conditions are only for use when specifically requested.

**NOTE** A tightly-controlled temperature range is considered unnecessary for most cable tests.

Consideration shall be given to the effects of temperature differences and variations on electronic and optical test equipment that may be used in performing the tests. It may be necessary to maintain such equipment at the controlled atmospheric conditions by appropriate means.

4.3 Symbols and abbreviated terms

Symbols and abbreviated terms are given in IEC 60794-1-1.