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Edition 3.0 2019-04
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INTERNATIONAL STANDARD

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Optical fibre cables –
Part 2-11: Indoor ~~optical fibre~~ cables – Detailed specification for simplex and duplex cables for use in premises cabling

IEC 60794-2-11:2019-04 RLV(en)

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OPTICAL FIBRE CABLES –

Part 2-11: Indoor ~~optical fibre~~ cables – Detailed specification for simplex and duplex cables for use in premises cabling

FOREWORD

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International Standard IEC 60794-2-11 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

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

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

a) incorporation of the OM5 cabled fibre performance category;
b) incorporation of the OS1a cabled fibre performance category;
c) cabled fibre performance categories OM1, OM2 and OS1 are no longer normative, and are retained for information.

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

FDIS	Report on voting
86A/1924/FDIS	86A/1934/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 the 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 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- withdrawn,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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OPTICAL FIBRE CABLES –

Part 2-11: Indoor ~~optical fibre~~ cables – Detailed specification for simplex and duplex cables for use in premises cabling

1 Scope

This part of IEC 60794 presents the detailed requirements specific to this type of cable to ensure compatibility with the series of International Standards ISO/IEC 11801, *Information technology – Generic cabling for customer premises* (Parts 1 to 6).

The requirements of family specification IEC 60794-2-10~~:2011~~ are applicable to cables covered by this document.

Particular requirements detailed in Clause 4 define either a specific option in relation to the requirements of IEC 60794-2-10~~:2011~~ or additional requirements.

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.

~~They complete the normative references already listed in the generic specification (IEC 60794-1-1:2011, and IEC 60794-1-2:2003,) and in the sectional specification (IEC 60794-2:2002, Clause 2) or in the family specification (IEC 60794-2-10:2011, Clause 2).~~

IEC 60793-2-10:~~2007~~ —, *Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres*[1]

IEC 60793-2-50:~~2008~~ 2018, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-1-1:~~2011~~ 2015, *Optical fibre cables – Part 1-1: Generic specification – General*

~~IEC 60794-1-2:2003, *Optical fibre cables – Part 1-2: Generic specification – Basic optical cable test procedures*~~

~~IEC 60794-2:2002, *Optical fibre cables – Part 2: Indoor cables – Sectional specification*~~

IEC 60794-2-10:2011, *Optical fibre cables – Part 2-10: Indoor optical fibre cables – Family specification for simplex and duplex cables*

[1] Edition 7 under preparation. Stage at the time of publication: IEC DECFDIS 60793-2-10:2019.

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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 General requirements

The cable shall comply with the family specification IEC 60794-2-10~~:2011~~ and meet the requirements that are defined in it.

The optical fibre contained in the cables which are covered by this document shall comply with one of the following International Standards and meet the~~ normative~~ requirements defined within them as applicable:

- ~~IEC 60793-2-50:2008, Annex A [Single-mode B1.1 fibre]~~
- ~~IEC 60793-2-50:2008, Annex C [Single-mode B1.3 fibre]~~
- ~~IEC 60793-2-50:2008, Annex G [Single-mode B6_a1 and B6_a2 fibre]~~
- ~~IEC 60793-2-10:2007, Annex A [Multimode A1a.1, 50 µm core fibre]~~
- ~~IEC 60793-2-10:2007, Annex A [Multimode A1a.2, 50 µm core fibre]~~
- ~~IEC 60793-2-10:2007, Annex A [Multimode A1a.3, 50 µm core fibre]~~
- ~~IEC 60793-2-10:2007, Annex B [Multimode A1b, 62.5 µm core fibre]~~
- IEC 60793-2-50:2018, Annex A (single-mode B-652.D fibre);
- IEC 60793-2-50:2018, Annex F (single-mode B-657 fibres);
- IEC 60793-2-10:—[2], Annex A (multimode A1-OM3 fibre);
- IEC 60793-2-10:—, Annex A (multimode A1-OM4 fibre);
- IEC 60793-2-10:—, Annex A (multimode A1-OM5 fibre).

To ensure compatibility with ISO/IEC 11801 (all parts), optical performance level requirements are presented in terms of the performance classification codes for cabled optical fibre as follows:

- ~~OS1 Single-mode fibre, B1.1, B1.3 category or sub-category B6_a1 and B6_a2;~~
- ~~OS2 Single-mode fibre, B1.3 or sub-category B6_a1 and B6_a2;~~
- ~~OM1 Multimode fibre, Model A1a.1 or sub-category A1b;~~
- ~~OM2 Multimode fibre, Model A1a.1 or sub-category A1b;~~
- ~~OM3 Multimode fibre, Model A1a.2;~~
- ~~OM4 Multimode fibre, Model A1a.3;~~
- OS1a Single-mode fibre, categories B-652.D or B-657;
- OS2 Single-mode fibre, categories B-652.D or B-657;
- OM3 Multimode fibre, A1-OM3 category;
- OM4 Multimode fibre, A1-OM4 category;

[2] Edition 7 under preparation. Stage at the time of publication: IEC DECFDIS 60793-2-10:2019.

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- OM5 Multimode fibre, A1-OM5 category.

NOTE These codes are informative from the perspective of the requirements defined in this document. The OS1, OM1 and OM2 performance classification codes for cabled optical fibre are no longer normative in ISO/IEC 11801 (all parts). See ISO/IEC 11801-1:2017, Annex F, for more information.

5 Particular requirements

5.1 Fibre selection for cable testing

The fibre selection for cable testing shall be performed according to IEC 60794-1-1:2015, Annex B.

5.2 Environmental requirements – Temperature cycling

~~The cable shall meet the requirement of IEC 60794-2-10:2011, 5.4.1, option c (20 °C to +60 °C).~~

The cable shall be tested as per IEC 60794-2-10:2011, 5.4.1, and shall meet one of the following temperature ranges as per the MICE classification system:

- C_1: −10 °C to +60 °C;
- C_2: −25 °C to +70 °C;
- C_3: −40 °C to +70 °C.

The test shall be performed on a 50 m specimen.

~~No attenuation changes (according to IEC 60794-1-1:2011, B.3) shall be allowed during the test~~

The maximum increase in attenuation shall be agreed between customer and supplier.

5.3 Transmission requirements

5.3.1 Attenuation of cabled fibre

Depending on the fibre category, the attenuation coefficient of the cabled fibre shall be less than the maximum values in Table 1 for the multimode fibres and less than the maximum values in Table 2 for single-mode fibres – for the wavelengths listed in Table 2.

The fibre category and performance level shall be agreed between customer and supplier.

Table 1 – Multimode cable maximum attenuation coefficient (dB/km)

Fibre	Attenuation coefficient at 850 nm	Attenuation coefficient at 1 300 nm	Performance codes
~~IEC 60793-2-10:2007, A1a.1~~	~~3,5~~	~~1,5~~	~~OM1 OM2~~
~~IEC 60793-2-10:2007, A1a.2~~	~~3,5~~	~~1,5~~	~~OM1 OM2 OM3~~
~~IEC 60793-2-10:2007, A1a.3~~	~~3,5~~	~~1,5~~	~~OM1 OM2 OM3 OM4~~
~~IEC 60793-2-10:2007, A1b~~	~~3,5~~	~~1,5~~	~~OM1 OM2~~
IEC 60793-2-10, A1-OM3	3,0	1,5	OM3
IEC 60793-2-10, A1-OM4	3,0	1,5	OM4
IEC 60793-2-10, A1-OM5	3,0	1,5	OM5

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