

INTERNATIONAL STANDARD



Optical fibre cables –

Part 3-12: Outdoor cables – Detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling

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Optical fibre cables –

Part 3-12: Outdoor cables – Detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling

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CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 General requirements	6
5 Particular requirements	7
5.1 General	7
5.2 MICE (mechanical, ingress, climatic and chemical and electromagnetic) characteristics	7
5.3 Transmission requirements	7
5.3.1 Attenuation of cabled fibre	7
5.3.2 Fibre bandwidth requirements	8
5.3.3 Polarization mode dispersion (PMD) requirements	9
Bibliography	10
Table 1 – Multimode cable maximum cable attenuation coefficient (dB/km)	7
Table 2 – Single-mode cable maximum cable attenuation coefficient (dB/km)	8
Table 3 – Minimum Multimode fibre minimum (MHz·km)	8

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES –

**Part 3-12: Outdoor cables –
Detailed specification for duct and directly buried optical
telecommunication cables for use in premises cabling**

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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- 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.
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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60794-3-12:2012. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60794-3-12 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics. It is an International Standard.

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 changes with respect to the previous edition:

- a) addition of references to ISO/IEC 11801-1;
- b) removal of references to ISO/IEC 24702;
- c) incorporation of the OM5 cabled fibre performance category;
- d) incorporation of the OS1a cabled fibre performance category;
- e) 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:

CDV	Report on voting
86A/2027/CDV	86A/2064/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

This International Standard is to be used in conjunction with IEC 60794-1-1, IEC 60794-1-2 and IEC 60794-3-10.

A list of all parts of 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
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OPTICAL FIBRE CABLES –

Part 3-12: Outdoor cables – Detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling

1 Scope

This part of IEC 60794 is a detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling to ensure compatibility with ISO/IEC 11801-1 ~~and ISO/IEC 24702. These standards have~~ This document's requirements to ensure that the ISO/IEC 11801-1 models work for generic cabling and system performances. Values in this document support these models.

The requirements of the family specification IEC 60794-3-10 are applicable to cables covered by this document. Particular requirements detailed in Clause 5 either define a specific option relative to the requirements of IEC 60794-3-10 or define 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.

~~NOTE – These references complete the normative references already listed in the generic specifications IEC 60794-1-1 and IEC 60794-1-2, in the sectional specification IEC 60794-3 and in the family specification IEC 60794-3-10.~~

IEC 60793-2-10:20112019, *Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres*

IEC 60793-2-50:20122018, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-1-1, *Optical fibre cables – Part 1-1: Generic specification – ~~Cross reference table for optical cable test procedures~~ General*

IEC 60794-1-2, *Optical fibre cables – Part 1-2: Generic specification – ~~Cross reference table for optical cable test procedures~~¹ Basic optical cable test procedures – General guidance*

IEC 60794-3, *Optical fibre cables – Part 3: Outdoor cables – Sectional specification*

IEC 60794-3-10, *Optical fibre cables – Part 3-10: Outdoor cables – Family specification for duct, directly buried and lashed aerial optical telecommunication cables*

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

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

¹– IEC 60794-1-2:2003, Second edition has been withdrawn. A third edition, with the revised title *Optical fibre cables – Part 1-2: Generic specification – Cross reference table for optical cable test procedures*, is currently in preparation.

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 60794-3-10, and meet the requirements which are defined in it, including requirements in the sectional specification, IEC 60794-3. Particular requirements detailed in Clause 5 are optional, relative to the requirements of IEC 60794-3-10, or define additional requirements.

The optical fibre contained in cables covered by this document shall comply with one of the following standards, and meet the normative requirements defined within them as applicable:

- ~~— IEC 60793-2-50:2008, Annex A (Single-mode fibre category B1.1);~~
- ~~— IEC 60793-2-50:2008, Annex C (Single-mode fibre category B1.3);~~
- ~~— IEC 60793-2-50:2008, Annex G (Single-mode fibre sub-categories B6-a1 and B6-a2)~~
- ~~— IEC 60793-2-10:2011, Annex A (Multimode fibre sub-category A1a, 50 µm core diameter);~~
- ~~— IEC 60793-2-10:2011, Annex B (Multimode fibre sub-category A1b, 62,5 µm core diameter);~~
- IEC 60793-2-50:2018, Annex A (single-mode B-652.D fibre sub-category);
- IEC 60793-2-50:2018, Annex F (single-mode B-657 fibres);
- IEC 60793-2-10:2019, Annex A (multimode fibre sub-categories A1-OM3, A1-OM4 and A1-OM5).

To ensure compatibility with the ISO/IEC 11801 series ~~and ISO/IEC 24702~~, optical performance level requirements are presented in terms of the performance classification codes for cabled optical fibre as follows:

- ~~— OS1 Single-mode fibre categories B1.1, B1.3 or sub-categories B6-a1, B6-a2;~~
- ~~— OS2 Single-mode fibre category B1.3 or sub-categories B6-a1, B6-a2;~~
- ~~— OM1 Multimode fibre sub-categories A1a, A1b;~~
- ~~— OM2 Multimode fibre sub-categories A1a, A1b;~~
- ~~— OM3 Multimode fibre model A1a.2;~~
- ~~— OM4 Multimode fibre model A1a.3.~~
- OS1a: single-mode fibre, sub-categories B-652.D or B-657;
- OS2: single-mode fibre, sub-categories B-652.D or B-657;
- OM3: multimode fibre sub-category A1-OM3;
- OM4: multimode fibre sub-category A1-OM4;
- OM5: multimode fibre sub-category A1-OM5.

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 (Parts 1 through 6). See ISO/IEC 11801-1:2017, Annex F, for more information.

5 Particular requirements

5.1 General

These requirements either define a specific option relative to the requirements of IEC 60794-3-10 or define additional requirements.

5.2 MICE (mechanical, ingress, climatic and chemical and electromagnetic) characteristics

Cables intended for installation in conformity with ~~ISO/IEC 24702~~ ISO/IEC 11801-1 and related standards may require the specification of additional tests to ensure their suitability in the applicable environments defined by the mechanical, ingress, climatic and chemical and electromagnetic (MICE) classification. Such tests are outside the scope of IEC 60794 cable specifications, and MICE criteria are not part of the requirements for IEC 60794 specifications. The MICE tests may be the same as, similar to, or substantially different from, the tests required by IEC 60794 specifications, specifically those in IEC 60794-1-21, IEC 60794-1-22 and IEC 60794-1-23. Cables manufactured per IEC 60794 specifications may or may not meet the MICE criteria. For supplemental discussion, see IEC TR 62362-1².

5.3 Transmission requirements

5.3.1 Attenuation of cabled fibre

Depending on the fibre ~~type~~ 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 ~~as stated in Tables 1 and 2~~ listed in Table 2.

The fibre category, ~~sub-category or model as applicable~~ and performance level shall be agreed between customer and supplier.

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

Fibre	Attenuation coefficient at 850 nm	Attenuation coefficient at 1 300 nm	Performance-code
IEC 60793-2-10:2011, A1a.1	3,5	1,5	OM1, OM2
IEC 60793-2-10:2011, A1a.2	3,5	1,5	OM1, OM2, OM3
IEC 60793-2-10:2011, A1a.3	3,5	1,5	OM1, OM2, OM3, OM4
IEC 60793-2-10:2011, A1b	3,5	1,5	OM1, OM2

Fibre	Attenuation coefficient at 850 nm	Attenuation coefficient at 1 300 nm	Performance codes
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

²—Numbers in square brackets refer to the Bibliography.

Table 2 – Single-mode ~~cable~~ maximum ~~cable~~ attenuation coefficient (dB/km)

Fibre	Wavelengths nm	Maximum attenuation coefficient	Performance code
IEC 60793-2-50:2008, B1.1, B1.3, B6 a1 or B6 a2	1 310, 1 550	1,0	OS1
IEC 60793-2-50:2008, B1.3, B6 a1 or B6 a2	1 310, 1 383, 1 550	0,4	OS2

Fibre	Wavelengths nm	Maximum attenuation coefficient	Performance codes
IEC 60793-2-50, B-652.D ,B-657.A1, B-657.A2, B-657.B2, B-657.B3	1 310, 1 383, 1 550	1,0	OS1a
	1 310, 1 383, 1 550	0,4	OS2

NOTE — Optical fibre B6 a is recommended when it is expected that the optical fibre or the cable will have to support smaller bend radii than 25 mm.

5.3.2 Fibre bandwidth requirements

There are no bandwidth requirements on single-mode fibre.

For cables containing multimode fibres, the uncabled fibre shall be specified at one of the performance levels defined in Table 3 in terms of minimum bandwidth (MHz·km), wavelength, and type of measurement.

The fibre category, ~~sub-category or model as applicable~~ and performance level shall be agreed between customer and supplier.

Table 3 – ~~Minimum~~ Multimode fibre minimum bandwidth (MHz·km)

Fibre	Nominal core diameter µm	Overfilled bandwidth at 850 nm	Overfilled bandwidth at 1 300 nm	Effective modal bandwidth at 850 nm	Performance code
IEC 60793-2-10:2011, A1a.1	50	200	500	N/A	OM1
IEC 60793-2-10:2011, A1a.1	50	500	500	N/A	OM2
IEC 60793-2-10:2011, A1a.2	50	1 500	500	2 000	OM3
IEC 60793-2-10:2011, A1a.3	50	3 500	500	4 700	OM4
IEC 60793-2-10:2011, A1b	62,5	200	500	N/A	OM1
IEC 60793-2-10:2011, A1b	62,5	500	500	N/A	OM2
N/A — Not applicable.					

Fibre	Nominal core diameter µm	Overfilled launch bandwidth at 850 nm	Overfilled launch bandwidth at 953 nm	Overfilled launch bandwidth at 1 300 nm	Effective modal bandwidth at 850 nm ^a	Effective modal bandwidth at 953 nm ^a	Performance codes
IEC 60793-2-10, A1-OM3	50	1 500	n/a	500	2 000	not specified	OM3
IEC 60793-2-10, A1-OM4	50	3 500	n/a	500	4 700	not specified	OM4
IEC 60793-2-10, A1-OM5	50	3 500	1 850	500	4 700	2 470	OM5

^a Effective modal bandwidth guidance is provided at all wavelengths in the 840 nm to 953 nm range in IEC 60793-2-10. For OM3, the guidance is 1 033 MHz·km at 953 nm. For OM4, the guidance is 1 459 MHz·km at 953 nm.

5.3.3 Polarization mode dispersion (PMD) requirements

Cables containing single-mode fibres shall meet the PMD requirement of IEC 60794-3. This is given as a link design value, PMD_Q , with a maximum of ~~$0,5 \text{ ps/km}^{1/2}$~~ $0,5 \text{ ps/km}^{-2}$ allowed.

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Bibliography

IEC 60794-1-21, *Optical fibre cables – Part 1-21: Generic specification – Basic optical cable test procedures – Mechanical test methods*

IEC 60794-1-22, *Optical fibre cables – Part 1-22: Generic specification – Basic optical cable test procedures – Environmental test methods*

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

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

ISO/IEC 11801-1:2017, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 11801-2, *Information technology – Generic cabling for customer premises – Part 2: Office premises*

ISO/IEC 11801-3, *Information technology – Generic cabling for customer premises – Part 3: Industrial premises*

ISO/IEC 11801-4, *Information technology – Generic cabling for customer premises – Part 4: Single-tenant homes*

ISO/IEC 11801-5, *Information technology – Generic cabling for customer premises – Part 5: Data centres*

ISO/IEC 11801-6, *Information technology – Generic cabling for customer premises – Part 6: Distributed building services*

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Optical fibre cables –

Part 3-12: Outdoor cables – Detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling

Câbles à fibres optiques –

Partie 3-12: Câbles extérieurs – Spécification particulière pour les câbles optiques de télécommunication destinés à être installés dans des conduites ou à être directement enterrés et utilisés dans le câblage de locaux

CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 General requirements	6
5 Particular requirements	6
5.1 General	6
5.2 MICE (mechanical, ingress, climatic and chemical and electromagnetic) characteristics	6
5.3 Transmission requirements	6
5.3.1 Attenuation of cabled fibre	6
5.3.2 Fibre bandwidth requirements	7
5.3.3 Polarization mode dispersion (PMD) requirements	7
Bibliography	8
Table 1 – Multimode cable maximum attenuation coefficient (dB/km)	7
Table 2 – Single-mode cable maximum attenuation coefficient (dB/km)	7
Table 3 – Multimode fibre minimum bandwidth (MHz·km)	7

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- a) addition of references to ISO/IEC 11801-1;
- b) removal of references to ISO/IEC 24702;
- c) incorporation of the OM5 cabled fibre performance category;
- d) incorporation of the OS1a cabled fibre performance category;
- e) 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:

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86A/2027/CDV	86A/2064/RVC

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The language used for the development of this International Standard is English.

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OPTICAL FIBRE CABLES –

Part 3-12: Outdoor cables – Detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling

1 Scope

This part of IEC 60794 is a detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling to ensure compatibility with ISO/IEC 11801-1. This document's requirements ensure that the ISO/IEC 11801-1 models work for generic cabling and system performances. Values in this document support these models.

The requirements of the family specification IEC 60794-3-10 are applicable to cables covered by this document. Particular requirements detailed in Clause 5 either define a specific option relative to the requirements of IEC 60794-3-10 or define 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.

IEC 60793-2-10:2019, *Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres*

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

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

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

IEC 60794-3, *Optical fibre cables – Part 3: Outdoor cables – Sectional specification*

IEC 60794-3-10, *Optical fibre cables – Part 3-10: Outdoor cables – Family specification for duct, directly buried and lashed aerial optical telecommunication cables*

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 60794-3-10, and meet the requirements which are defined in it, including requirements in the sectional specification, IEC 60794-3. Particular requirements detailed in Clause 5 are optional, relative to the requirements of IEC 60794-3-10, or define additional requirements.

The optical fibre contained in cables covered by this document shall comply with one of the following standards, and meet the normative requirements defined within them as applicable:

- IEC 60793-2-50:2018, Annex A (single-mode B-652.D fibre sub-category);
- IEC 60793-2-50:2018, Annex F (single-mode B-657 fibres);
- IEC 60793-2-10:2019, Annex A (multimode fibre sub-categories A1-OM3, A1-OM4 and A1-OM5).

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

- OS1a: single-mode fibre, sub-categories B-652.D or B-657;
- OS2: single-mode fibre, sub-categories B-652.D or B-657;
- OM3: multimode fibre sub-category A1-OM3;
- OM4: multimode fibre sub-category A1-OM4;
- OM5: multimode fibre sub-category A1-OM5.

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 (Parts 1 through 6). See ISO/IEC 11801-1:2017, Annex F, for more information.

5 Particular requirements

5.1 General

These requirements either define a specific option relative to the requirements of IEC 60794-3-10 or define additional requirements.

5.2 MICE (mechanical, ingress, climatic and chemical and electromagnetic) characteristics

Cables intended for installation in conformity with ISO/IEC 11801-1 and related standards may require the specification of additional tests to ensure their suitability in the applicable environments defined by the mechanical, ingress, climatic and chemical and electromagnetic (MICE) classification. Such tests are outside the scope of IEC 60794 cable specifications, and MICE criteria are not part of the requirements for IEC 60794 specifications. The MICE tests may be the same as, similar to, or substantially different from, the tests required by IEC 60794 specifications, specifically those in IEC 60794-1-21, IEC 60794-1-22 and IEC 60794-1-23. Cables manufactured per IEC 60794 specifications, may or may not meet the MICE criteria. For supplemental discussion, see IEC TR 62362.

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, 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

Table 2 – Single-mode cable maximum attenuation coefficient (dB/km)

Fibre	Wavelengths nm	Maximum attenuation coefficient	Performance codes
IEC 60793-2-50, B-652.D, B-657.A1, B-657.A2, B-657.B2, B-657.B3	1 310, 1 383, 1 550	1,0	OS1a
	1 310, 1 383, 1 550	0,4	OS2

5.3.2 Fibre bandwidth requirements

There are no bandwidth requirements on single-mode fibre.

For cables containing multimode fibres, the uncabled fibre shall be specified at one of the performance levels defined in Table 3 in terms of minimum bandwidth (MHz·km), wavelength, and type of measurement.

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

Table 3 – Multimode fibre minimum bandwidth (MHz·km)

Fibre	Nominal core diameter μm	Overfilled launch bandwidth at 850 nm	Overfilled launch bandwidth at 953 nm	Overfilled launch bandwidth at 1 300 nm	Effective modal bandwidth at 850 nm ^a	Effective modal bandwidth at 953 nm ^a	Performance codes
IEC 60793-2-10, A1-OM3	50	1 500	n/a	500	2 000	not specified	OM3
IEC 60793-2-10, A1-OM4	50	3 500	n/a	500	4 700	not specified	OM4
IEC 60793-2-10, A1-OM5	50	3 500	1 850	500	4 700	2 470	OM5

^a Effective modal bandwidth guidance is provided at all wavelengths in the 840 nm to 953 nm range in IEC 60793-2-10. For OM3, the guidance is 1 033 MHz·km at 953 nm. For OM4, the guidance is 1 459 MHz·km at 953 nm.

5.3.3 Polarization mode dispersion (PMD) requirements

Cables containing single-mode fibres shall meet the PMD requirement of IEC 60794-3. This is given as a link design value, PMD_Q , with a maximum of $0,5 \text{ ps/km}^{-2}$ allowed.

Bibliography

IEC 60794-1-21, *Optical fibre cables – Part 1-21: Generic specification – Basic optical cable test procedures – Mechanical test methods*

IEC 60794-1-22, *Optical fibre cables – Part 1-22: Generic specification – Basic optical cable test procedures – Environmental test methods*

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

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

ISO/IEC 11801-1:2017, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 11801-2, *Information technology – Generic cabling for customer premises – Part 2: Office premises*

ISO/IEC 11801-3, *Information technology – Generic cabling for customer premises – Part 3: Industrial premises*

ISO/IEC 11801-4, *Information technology – Generic cabling for customer premises – Part 4: Single-tenant homes*

ISO/IEC 11801-5, *Information technology – Generic cabling for customer premises – Part 5: Data centres*

ISO/IEC 11801-6, *Information technology – Generic cabling for customer premises – Part 6: Distributed building services*

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SOMMAIRE

AVANT-PROPOS	11
1 Domaine d'application	13
2 Références normatives	13
3 Termes et définitions	13
4 Exigences générales	14
5 Exigences particulières.....	14
5.1 Généralités	14
5.2 Caractéristiques MICE (mécanique, intrusion, climatique et chimique et électromagnétique)	14
5.3 Exigences de transmission.....	15
5.3.1 Affaiblissement de la fibre câblée	15
5.3.2 Exigences de largeur de bande de la fibre	15
5.3.3 Exigences relatives à la dispersion du mode de polarisation (PMD)	16
Bibliographie.....	17
Tableau 1 – Affaiblissement linéique maximal du câble multimodal (dB/km).....	15
Tableau 2 – Affaiblissement linéique maximal du câble en unimodal (dB/km).....	15
Tableau 3 – Largeur de bande minimale pour les fibres multimodales (MHz•km).....	15

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

CÂBLES À FIBRES OPTIQUES –

**Partie 3-12: Câbles extérieurs –
Spécification particulière pour les câbles optiques de télécommunication
destinés à être installés dans des conduites ou à être directement
enterrés et utilisés dans le câblage de locaux**

AVANT-PROPOS

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L'IEC 60794-3-12 a été établie par le sous-comité 86A: Fibres et câbles, du comité d'études 86 de l'IEC: Fibres optiques. Il s'agit d'une Norme internationale.

Cette troisième édition annule et remplace la deuxième édition parue en 2012. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) ajouts de références à l'ISO/IEC 11801-1;
- b) suppression des références à l'ISO/IEC 24702;

- c) intégration de la catégorie de performance de fibres câblées OM5;
- d) intégration de la catégorie de performance de fibres câblées OS1a;
- e) les catégories de performances des fibres câblées OM1, OM2 et OS1 ne sont plus normatives; elles sont conservées à titre d'information.

Le texte de cette Norme internationale est issu des documents suivants:

CDV	Rapport de vote
86A/2027/CDV	86A/2064/RVC

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

La présente Norme internationale doit être utilisée conjointement avec l'IEC 60794-1-1, l'IEC 60794-1-2 et l'IEC 60794-3-10.

Une liste de toutes les parties de la série IEC 60794, publiées sous le titre général *Câbles à fibres optiques*, peut être consultée sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

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CÂBLES À FIBRES OPTIQUES –

Partie 3-12: Câbles extérieurs –

Spécification particulière pour les câbles optiques de télécommunication destinés à être installés dans des conduites ou à être directement enterrés et utilisés dans le câblage de locaux

1 Domaine d'application

La présente partie de l'IEC 60794 est une spécification particulière de câbles optiques de télécommunication destinés à être installés dans des conduites ou à être directement enterrés et utilisés dans les câblages de locaux. Le but est d'assurer la compatibilité avec l'ISO/IEC 11801-1. Le présent document contient des exigences destinées à assurer le fonctionnement des modèles selon ISO/IEC 11801-1 concernant le câblage générique et les performances du système. Les valeurs indiquées du présent document sont compatibles avec ces modèles.

Les exigences contenues dans la spécification de famille IEC 60794-3-10 sont applicables aux câbles couverts par le présent document. Les exigences particulières figurant à l'Article 5 définissent soit une option spécifique relative aux exigences de l'IEC 60794-3-10, soit des exigences supplémentaires.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60793-2-10:2019, *Fibres optiques – Partie 2-10: Spécifications de produits – Spécification intermédiaire pour les fibres multimodales de la catégorie A1*

IEC 60793-2-50:2018, *Fibres optiques – Partie 2-50: Spécifications de produits – Spécification intermédiaire pour les fibres unimodales de classe B*

IEC 60794-1-1, *Câbles à fibres optiques – Partie 1-1: Spécification générique – Généralités*

IEC 60794-1-2, *Câbles à fibres optiques – Partie 1-2: Spécification générique – Procédures fondamentales d'essais des câbles optiques – Lignes directrices générales*

IEC 60794-3, *Câbles à fibres optiques – Partie 3: Câbles extérieurs – Spécification intermédiaire*

IEC 60794-3-10, *Câbles à fibres optiques – Partie 3-10: Câbles extérieurs – Spécification de famille pour les câbles optiques de télécommunication destinés à être installés dans des conduites, directement enterrés ou attachés en aérien*

3 Termes et définitions

Aucun terme n'est défini dans le présent document.