PUBLICLY
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SPECIFICATION

IEC PAS 60794-2-11

Pre-Standard

First edition
2004-03

Optical fibre cables –

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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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IEC-PAS 60794-2-11 has been processed by subcommittee 86A: Fibre and cables, of IEC technical committee 86: Fibre optics.

The text of this PAS is based on the following document:

This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document

Draft PAS	Report on voting
86A/861/NP	86A/883/RVN

Following publication of this PAS, which is a pre-standard publication, the technical committee or subcommittee concerned will transform it into an International Standard.

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 document presents the detailed requirements specific to this type of cable to ensure compatibility with ISO 11801. The requirements of the IEC 60794-2-10 are applicable to cables covered by this standard.

2 Normative references

The following referenced documents are indispensable for the application 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:*Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibre* [1)]

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

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

ISO 11801:*Information technology – Generic cabling for customer premises*

3 General requirements

The cable shall meet the requirements of IEC 60794-2-10, along with the normative requirements defined in it.

The optical fibre contained in the cable shall meet the requirements of one of the following, along with the normative requirements defined within them:

- 60793-2-50, Annex A (single-mode B1.1 fibre)
- 60793-2-50, Annex C (single-mode B1.3 fibre)
- 60793-2-10, Annex A (multimode A1a, 50 μm core fibre)
- 60793-2-10, Annex B (multimode A1b, 62.5 μm core fibre)

To ensure compatibility with ISO 11801, optical performance level requirements are presented in terms of the performance classification codes found there. These codes are informative from the perspective of the requirements defined in the following clauses. The codes are:

- OS1 Single-mode B1.1 or B1.3 fibre
- OM1 Multimode A1a or A1b fibre
- OM2 Multimode A1a or A1b fibre
- OM3 Multimode A1a fibre defined in 86A/845/CD [2] as A1a.2

1) Second edition to be published.

NOTE The multimode fibre performance levels are distinguished by bandwidth requirements. In edition 2 of 60793-2-10, two sub-categories of A1a fibre are defined, with A1a.1 as being suitable for both OM1 and OM2, but only A1a.2 as being suitable for OM3. Where either the prior overall category or sub-category A1a.1 is required, the .1 is enclosed in parenthesis. Where sub-category A1a.2 is required, there is an asterisk pointing to a note. It is expected that these editorial aspects will be removed before this document is submitted for FDIS ballot.

4 Particular requirements

These requirements either define a specific option relative to the requirements of IEC 60794-2-10 or define additional requirements.

4.1 Environmental requirements

4.1.1 Temperature cycling

The cable shall meet the requirement of 60794-2-10, 4.3.1, option c (–20 °C to +60 °C).

4.2 Transmission requirements

4.2.1 Attenuation of cabled fibre

Depending on the fibre type, 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 the column headings.

The fibre type shall be agreed between customer and supplier.

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

Fibre category	Attenuation coefficient at 850 nm	Attenuation coefficient at 1300 nm
IEC 60793-2-10, A1a(.1)	3.5	1.5
IEC 60793-2-10, A1a.2*	3.5	1.5
IEC 60793-2-10, A1b	3.5	1.5
* Pending approval of IEC 60793-2-10, Ed. 2.		

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

Fibre category	Attenuation coefficient at 1310 nm	Attenuation coefficient at 1550 nm
IEC 60793-2-50, B1.1 or B1.3	1.0	1.0

4.2.2 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 performance levels defined in Table 3 in terms of minimum bandwidth (MHz•km), wavelength, and type of measurement.

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

Table 3 – Minimum multimode fibre bandwidth (MHz•km)

Fibre category	Nominal core diameter (μm)	Overfilled bandwidth at 850 nm	Overfilled bandwidth at 1300 nm	Effective modal bandwidth at 850 nm*	Performance code from IS 11801 [1]
IEC 60793-2-10, A1a(.1)	50	200	500	na	OM1
IEC 60793-2-10, A1a(.1)	50	500	500	na	OM2
IEC 60793-2-10, A1a.2*	50	1500	500	2000	OM3
IEC 60793-2-10, A1b	62.5	200	500	na	OM1
IEC 60793-2-10, A1b	62.5	500	500	na	OM2
* Pending approval of 60793-2-10, Ed. 2.					

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