

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Optical fibre cables –
Part 6: Indoor-outdoor cables – Sectional specification for indoor-outdoor
cables**

**Câbles à fibres optiques –
Partie 6: Câbles intérieurs/extérieurs – Spécification intermédiaire pour
les câbles intérieurs/extérieurs**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES –

**Part 6: Indoor-outdoor cables –
Sectional specification for indoor-outdoor cables**

FOREWORD

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International Standard IEC 60794-6 has been prepared by subcommittee SC 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86A/2042/FDIS	86A/2052/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 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- withdrawn,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 6: Indoor-outdoor cables – Sectional specification for indoor-outdoor cables

1 Scope

This part of IEC 60794 is a sectional specification covering general features of optical fibre cables applicable to outdoor as well as indoor environments, called "indoor-outdoor cables". Indoor-outdoor cables are deployed in outside plant environments as well as in premises thus fulfilling outdoor as well as indoor requirements. Typical application spaces are, for example, extension of a duct cable into a building or using this design for centralized cabling in the central office, the premises or local area network where the same cable is used for the entire length of the cabling link including both the indoor as well as the outdoor portions.

Cables which generally possess the characteristics associated with outdoor cable designs having the thermal and mechanical robustness that makes them suitable for use in the outside plant, while simultaneously being relatively flexible, compact and lightweight and exhibiting the fire performance required in indoor premises are specified in IEC 60794-6-10.

Flame retardant outdoor cables as specified in IEC 60794-6-20 are used when most of the cable length is deployed as an outdoor cable with a part of its length deployed indoors. The cable design can be derived from a typical outdoor cable design according to the product specifications described in IEC 60794-3. The specific performance related to bend radii according to the installation situation and fire performance according to the regional legislation mainly requires the appropriate selection of the jacket material in combination with other material and/or design considerations. Because of the use in buildings with tighter space restrictions, higher flexibility of the cable is often required for the installation. Often, smaller diameter cables are preferred.

Indoor cables which are weatherised as specified in (IEC 60794-6-30) are used when an indoor cable is used outdoors over a short distance (few meters), for example when the network access point (NAP) is very close to the building. The indoor-outdoor fibre optical cable design can be derived from an indoor design (see IEC 60794-2 and IEC TR 62901 for typical applications) with specific outdoor performance features added. Critical parameters are UV stability, and resistance against exposure to humidity.

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 60793-1-40, *Optical fibres – Part 1-40: Attenuation measurement methods*

IEC 60793-2, *Optical fibres – Part 2: Product specifications – General*

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

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

IEC 60794-2:2017, *Optical fibre cables – Part 2: Indoor cables – Sectional specification*

IEC 60794-3:2014, *Optical fibre cables – Part 3: Outdoor cables – Sectional specification*

IEC 60794-6-10, *Optical fibre cables – Part 6-10: Indoor-outdoor cables – Family specification for universal indoor-outdoor cables*

IEC 60794-6-20, *Optical fibre cables – Part 6-20: Indoor-outdoor cables – Family specification for flame retardant outdoor cables*

IEC 60794-6-30, *Optical fibre cables – Part 6-30: Indoor-outdoor cables – Family specification for weatherised indoor cables*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms, definitions and abbreviated terms given in IEC 60794-1-1 and the following 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>

3.1 Terms and definitions

3.1.1

indoor-outdoor cable

cable used indoors as well as outdoors

3.2 Abbreviated terms

CB carbon black

FR flame retardant

NAP network access point

4 Optical fibres

Optical fibre shall be used which meets the requirements of IEC 60793-2. The fibre type shall be agreed between the customer and supplier.

The attenuation, attenuation continuity, cut-off wavelength and PMD should conform with the appropriate sectional, family, detailed or product specification of IEC 60794 (all parts).

The attenuation coefficient shall be measured in accordance with IEC 60793-1-40 and IEC 60794-1-1.

5 Cable elements

5.1 General

Generally, optical cables comprise several elements (see IEC 60794-1-3) or individual constituents, depending on the cable design which takes into account the cable application, operating environment and manufacturing processes, as well as the need to protect the fibre during handling and cabling.