

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Optical fibre cables –  
Part 3: Outdoor cables – Sectional specification**

**Câbles à fibres optiques –  
Partie 3: Câbles extérieurs – Spécification intermédiaire**



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ELECTROTECHNICAL  
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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms, definitions, symbols and abbreviated terms.....	7
4 Optical fibre.....	7
4.1 General.....	7
4.2 Attenuation.....	7
4.2.1 Attenuation coefficient.....	7
4.2.2 Attenuation uniformity – Attenuation discontinuities .....	8
4.3 Cut-off wavelength.....	8
4.4 Fibre colouring.....	8
4.5 Polarization mode dispersion (PMD).....	8
5 Cable element.....	8
5.1 General.....	8
5.2 Tight secondary coating or buffer.....	9
5.3 Ruggedized fibre.....	9
5.4 Slotted core.....	9
5.5 Polymeric tube.....	9
5.6 Ribbon.....	9
5.7 Metallic tube.....	10
5.7.1 Metallic tube on the optical core.....	10
5.7.2 Fibres directly located in a metallic tube.....	10
6 Optical fibre cable construction.....	10
6.1 General.....	10
6.2 Lay-up of the cable elements.....	10
6.3 Cable core filling.....	11
6.4 Strength member.....	11
6.5 Moisture barrier.....	11
6.6 Cable sheath and armouring.....	12
6.6.1 Inner sheath.....	12
6.6.2 Armouring.....	12
6.6.3 Outer sheath.....	12
6.7 Sheath marking.....	13
7 Installation and operating conditions.....	13
8 Characterization of cable elements.....	13
9 Optical fibre cable tests.....	14
10 Quality assurance.....	15
Bibliography.....	16
Table 1 – Characteristics of different types of cable elements.....	14
Table 2 – Mechanical and environmental applicable tests.....	15

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## OPTICAL FIBRE CABLES –

## Part 3: Outdoor cables – Sectional specification

## FOREWORD

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

This fifth edition cancels and replaces the fourth edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical change with respect to the previous edition: the ribbon specification has been removed, because it is covered in IEC 60794-1-31.

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

Draft	Report on voting
86A/2155/FDIS	86A/2184/RVD

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

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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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

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 [webstore.iec.ch](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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## INTRODUCTION

IEC 60794-1-21, IEC 60794-1-22, IEC 60794-1-23, and IEC 60794-1-24 have been (or will be) divided into multiple standards which defines one test method each. IEC 60794-1-2:2021 gives cross references between old standards and new standards.

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## OPTICAL FIBRE CABLES –

### Part 3: Outdoor cables – Sectional specification

#### 1 Scope

This part of IEC 60794 specifies the requirements for optical fibre cables and cable elements which are intended to be used externally in communications networks. Other types of applications requiring similar types of cables can be considered.

Requirements for cables to be used in ducts, for directly buried applications, aerial cables and cables for lake and river crossings are included in this document. Also included are cables for specialized use in sewers and in water and gas pipes.

For aerial application, this document does not cover all functional aspects of cables installed in the vicinity of overhead power lines. For such applications, additional requirements and test methods can be necessary. Moreover, this document excludes optical ground wires and cables attached to the phase or earth conductors of overhead power lines.

For cables for lake and river crossings, this document does not cover methods of cable repair, nor repair capability, nor does it cover cables for use with underwater line amplifiers.

#### 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 60304, *Standard colours for insulation for low-frequency cables and wires*

IEC 60708, *Low-frequency cables with polyolefin insulation and moisture barrier polyolefin sheath*

IEC 60793-1-21, *Optical fibres – Part 1-21: Measurement methods and test procedures – Coating geometry*

IEC 60793-1-32, *Optical fibres – Part 1-32: Measurement methods and test procedures – Coating strippability*

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

IEC 60793-1-44, *Optical fibres – Part 1-44: Measurement methods and test procedures – Cut-off wavelength*

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

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

IEC 60794-1-21:2015, *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 elements test methods*

IEC 60811-202, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 202: General tests – Measurement of thickness of non-metallic sheath*

IEC 60811-203, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 203: General tests – Measurement of overall dimensions*

IEC 60811-401, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 401: Miscellaneous tests – Thermal ageing methods – Ageing in an air oven*

IEC 60811-406, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 406: Miscellaneous tests – Resistance to stress cracking of polyethylene and polypropylene compounds*

IEC 60811-501, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 501: Mechanical tests – Tests for determining the mechanical properties of insulating and sheathing compounds*

IEC 60811-604:2012, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 604: Physical tests – Measurement of absence of corrosive components in filling compounds*

IEC 60811-607, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 607: Physical tests – Test for the assessment of carbon black dispersion in polyethylene and polypropylene*

### **3 Terms, definitions, symbols and abbreviated terms**

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

## **4 Optical fibre**

### **4.1 General**

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

### **4.2 Attenuation**

#### **4.2.1 Attenuation coefficient**

The maximum cabled fibre attenuation coefficient shall conform to IEC 60794-1-1. Particular values may be agreed between the customer and supplier.