

# INTERNATIONAL STANDARD



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**Optical fibre cables –**

**Part 2-30: Indoor cables – Family specification for optical fibre ribbon cables for use in terminated cable assemblies**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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ICS 33.180.10

ISBN 978-2-8322-6684-7

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## CONTENTS

|                                                                   |    |
|-------------------------------------------------------------------|----|
| FOREWORD .....                                                    | 4  |
| 1 Scope .....                                                     | 6  |
| 2 Normative references .....                                      | 6  |
| 3 Terms and definitions .....                                     | 7  |
| 4 Construction .....                                              | 7  |
| 4.1 General .....                                                 | 7  |
| 4.2 Optical fibres and primary coating .....                      | 8  |
| 4.3 Buffer .....                                                  | 8  |
| 4.4 Ruggedized fibre .....                                        | 8  |
| 4.5 Slotted core .....                                            | 8  |
| 4.6 Tube .....                                                    | 8  |
| 4.7 Stranded loose tube .....                                     | 8  |
| 4.8 Ribbon structure .....                                        | 8  |
| 4.9 Strength and anti-buckling members .....                      | 8  |
| 4.10 Ripcord .....                                                | 8  |
| 4.11 Sheath .....                                                 | 8  |
| 4.12 Sheath marking .....                                         | 9  |
| 4.13 Identification .....                                         | 9  |
| 4.14 Example of cable construction .....                          | 9  |
| 5 Dimensions .....                                                | 9  |
| 5.1 Optical fibres and primary coating .....                      | 9  |
| 5.2 Ribbon structural geometry .....                              | 10 |
| 5.3 Optical fibre ribbon cable .....                              | 10 |
| 6 Tests .....                                                     | 10 |
| 6.1 General .....                                                 | 10 |
| 6.2 Dimensions .....                                              | 10 |
| 6.3 Mechanical requirements .....                                 | 11 |
| 6.3.1 Cable tensile performance .....                             | 11 |
| 6.3.2 Cable crush .....                                           | 11 |
| 6.3.3 Cable impact .....                                          | 11 |
| 6.3.4 Cable bending .....                                         | 11 |
| 6.3.5 Cable repeated bending .....                                | 11 |
| 6.3.6 Cable bending under tension .....                           | 12 |
| 6.3.7 Cable bending at low temperature .....                      | 12 |
| 6.3.8 Cable flexing .....                                         | 12 |
| 6.3.9 Cable torsion .....                                         | 12 |
| 6.3.10 Cable kink .....                                           | 12 |
| 6.4 Environmental requirements – Temperature cycling .....        | 12 |
| 6.5 Transmission requirements .....                               | 13 |
| 6.5.1 General .....                                               | 13 |
| 6.5.2 Single mode optical fibres .....                            | 13 |
| 6.5.3 Single-mode dispersion unshifted optical fibre (B1.1) ..... | 13 |
| 6.5.4 Single-mode dispersion unshifted optical fibre (B1.2) ..... | 14 |
| 6.5.5 Single-mode dispersion unshifted optical fibre (B1.3) ..... | 14 |
| 6.5.6 Single-mode dispersion shifted optical fibre (B2) .....     | 14 |
| 6.5.7 Single-mode non-zero dispersion optical fibre (B4) .....    | 14 |

|                       |                                                                                                                                                                       |    |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 6.5.8                 | Single-mode wide band non-zero dispersion optical fibre (B5) .....                                                                                                    | 15 |
| 6.5.9                 | Single-mode bending loss insensitive optical fibre (B6).....                                                                                                          | 15 |
| 6.5.10                | Multimode fibres .....                                                                                                                                                | 15 |
| 6.6                   | Fire performance .....                                                                                                                                                | 15 |
| Annex A (informative) | Example of cable construction .....                                                                                                                                   | 17 |
| Annex B (informative) | Family specification indoor cables – Optical fibre ribbon cables.....                                                                                                 | 18 |
| B.1                   | Blank detail specification .....                                                                                                                                      | 18 |
| B.1.1                 | Cable description.....                                                                                                                                                | 18 |
| B.1.2                 | Cable element .....                                                                                                                                                   | 19 |
| B.1.3                 | Cable construction .....                                                                                                                                              | 19 |
| B.1.4                 | Installation and operating conditions.....                                                                                                                            | 20 |
| B.1.5                 | Mechanical, environmental and fire performance tests.....                                                                                                             | 20 |
| B.2                   | <del>Additional requirements for</del> Cables subject to the MICE environmental<br>classification ( <del>ISO/IEC 24702</del> ISO 11801-3 and related standards) ..... | 21 |
| Bibliography          | .....                                                                                                                                                                 | 24 |

Figure 1 – Example of identification by means of colour coding and positioning .....9

Figure A.1 – Example of cross-section of a four-fibre ribbon cable ..... 17

~~Table — Specifications for Industrial Premises installations as defined in  
ISO/IEC 24702.....~~

|                                                                         |    |
|-------------------------------------------------------------------------|----|
| Table 1 – Dimensions of optical fibre ribbon cables .....               | 10 |
| Table 2 – Temperature cycling conditions .....                          | 13 |
| Table 3 – Common single-mode fibre requirements .....                   | 13 |
| Table 4 – Cabled attenuation requirements for B1.1 optical fibre .....  | 13 |
| Table 5 – Cabled attenuation requirements for B1.2 optical fibre .....  | 14 |
| Table 6 – Cabled attenuation requirements for B1.3 optical fibre .....  | 14 |
| Table 7 – Cabled attenuation requirements for B2 optical fibre .....    | 14 |
| Table 8 – Cabled attenuation requirements for B4 optical fibre .....    | 14 |
| Table 9 – Cabled attenuation requirements for B5 optical fibre .....    | 15 |
| Table 10 – Cabled attenuation requirements for B6 optical fibre .....   | 15 |
| Table 11 – Requirements for multimode optical fibre (A1a and A1b) ..... | 15 |
| Table B.1 – Cable description .....                                     | 18 |
| Table B.2 – Cable element.....                                          | 19 |
| Table B.3 – Cable construction .....                                    | 19 |
| Table B.4 – Installation and operating conditions .....                 | 20 |
| Table B.5 – Tests applicable .....                                      | 21 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OPTICAL FIBRE CABLES –

**Part 2-30: Indoor cables –  
Family specification for optical fibre ribbon  
cables for use in terminated cable assemblies**

## 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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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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

International Standard IEC 60794-2-30 has been prepared by sub-committee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition published in 2008. This edition constitutes a technical revision.

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

- a) removal of Annex C;
- b) reference to the most recent fibre standards;
- c) reference to IEC 60794-1-21, IEC 60794-1-22, IEC 60794-1-23 and IEC 60794-1-24.

This standard is to be used in conjunction with IEC 60794-1-1, IEC 60794-1-2 and IEC 60794-2.

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

| CDV          | Report on voting |
|--------------|------------------|
| 86A/1704/CDV | 86A/1808/RVC     |

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

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## OPTICAL FIBRE CABLES –

### Part 2-30: Indoor cables – Family specification for optical fibre ribbon cables for use in terminated cable assemblies

## 1 Scope

This part of IEC 60794 is a family specification which covers indoor optical fibre ribbon cables for ~~indoor~~ use in terminated cable assemblies. The requirements of the sectional specification IEC 60794-2 are applicable to cables covered by this document.

The requirements of this document are written to define flat ribbon cables. This document can be applicable to other cable constructions. Parts of IEC 60794-3 which are applicable for ribbon tests are the subject of IEC 60794-1-31.

Annex B contains requirements that supersede the normal requirements in case the cables are intended to be used in installations governed by the MICE table of ISO ~~IEC-24702~~ 11801-3 [4]<sup>1</sup>.

## 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 reference complete the normative references already listed in the generic specifications (IEC 60794-1-1, ~~Clause 2~~, and IEC 60794-1-2, ~~Clause 2~~) or in the sectional specification (IEC 60794-2, ~~Clause 2~~).

IEC 60304:1982, *Standard colours for insulation for low-frequency cables and wires*

IEC 60793-1-20, *Optical fibres – Part 1-20: Measurement methods and test procedures – Fibre geometry*

IEC 60793-1-40, *Optical fibres – Part 1-40: Measurement methods and test procedures – Attenuation*

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

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

IEC 60794-1-1, *Optical fibre cables – Part 1-1: Generic specification – General* ~~86A/1054/NP~~

<sup>1</sup> Numbers in square brackets refer to the Bibliography.

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

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

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

~~IEC 60811-1-1:1993, Common test methods for insulating and sheathing materials of electric cables and optical cables – Part 1-1: Methods for general application – Measurement of thickness and overall dimensions – Tests for determining the mechanical properties~~

~~IEC 60811-1-4:1985, Common test methods for insulating and sheathing materials of electric cables – Part 1: Methods for general application – Section Four: Tests at low temperatures.~~

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 60811-504, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 504: Mechanical tests – Bending tests at low temperature for insulation and sheaths*

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Optical fibre cables –**

**Part 2-30: Indoor cables – Family specification for optical fibre ribbon cables for use in terminated cable assemblies**

**Câbles à fibres optiques –**

**Partie 2-30: Câbles intérieurs – Spécification de famille pour les câbles à rubans de fibres optiques utilisés dans les assemblages de câbles connectés**

## CONTENTS

|                                                                  |    |
|------------------------------------------------------------------|----|
| FOREWORD.....                                                    | 4  |
| 1 Scope.....                                                     | 6  |
| 2 Normative references .....                                     | 6  |
| 3 Terms and definitions .....                                    | 7  |
| 4 Construction .....                                             | 7  |
| 4.1 General.....                                                 | 7  |
| 4.2 Optical fibres and primary coating.....                      | 7  |
| 4.3 Buffer.....                                                  | 8  |
| 4.4 Ruggedized fibre.....                                        | 8  |
| 4.5 Slotted core .....                                           | 8  |
| 4.6 Tube .....                                                   | 8  |
| 4.7 Stranded loose tube.....                                     | 8  |
| 4.8 Ribbon structure .....                                       | 8  |
| 4.9 Strength and anti-buckling members .....                     | 8  |
| 4.10 Ripcord.....                                                | 8  |
| 4.11 Sheath .....                                                | 8  |
| 4.12 Sheath marking.....                                         | 8  |
| 4.13 Identification .....                                        | 8  |
| 4.14 Example of cable construction .....                         | 9  |
| 5 Dimensions.....                                                | 9  |
| 5.1 Optical fibres and primary coating.....                      | 9  |
| 5.2 Ribbon structural geometry .....                             | 9  |
| 5.3 Optical fibre ribbon cable .....                             | 9  |
| 6 Tests .....                                                    | 10 |
| 6.1 General.....                                                 | 10 |
| 6.2 Dimensions.....                                              | 10 |
| 6.3 Mechanical requirements .....                                | 10 |
| 6.3.1 Cable tensile performance .....                            | 10 |
| 6.3.2 Cable crush .....                                          | 11 |
| 6.3.3 Cable impact .....                                         | 11 |
| 6.3.4 Cable bending .....                                        | 11 |
| 6.3.5 Cable repeated bending.....                                | 11 |
| 6.3.6 Cable bending under tension .....                          | 11 |
| 6.3.7 Cable bending at low temperature .....                     | 11 |
| 6.3.8 Cable flexing .....                                        | 12 |
| 6.3.9 Cable torsion .....                                        | 12 |
| 6.3.10 Cable kink .....                                          | 12 |
| 6.4 Environmental requirements – Temperature cycling .....       | 12 |
| 6.5 Transmission requirements .....                              | 13 |
| 6.5.1 General .....                                              | 13 |
| 6.5.2 Single mode optical fibres.....                            | 13 |
| 6.5.3 Single-mode dispersion unshifted optical fibre (B1.1)..... | 13 |
| 6.5.4 Single-mode dispersion unshifted optical fibre (B1.2)..... | 13 |
| 6.5.5 Single-mode dispersion unshifted optical fibre (B1.3)..... | 14 |
| 6.5.6 Single-mode dispersion shifted optical fibre (B2) .....    | 14 |

|                                                                                             |                                                                                                  |    |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----|
| 6.5.7                                                                                       | Single-mode non-zero dispersion optical fibre (B4) .....                                         | 14 |
| 6.5.8                                                                                       | Single-mode wide band non-zero dispersion optical fibre (B5) .....                               | 14 |
| 6.5.9                                                                                       | Single-mode bending loss insensitive optical fibre (B6).....                                     | 15 |
| 6.5.10                                                                                      | Multimode fibres .....                                                                           | 15 |
| 6.6                                                                                         | Fire performance .....                                                                           | 15 |
| Annex A (informative) Example of cable construction .....                                   |                                                                                                  | 16 |
| Annex B (informative) Family specification indoor cables – Optical fibre ribbon cables..... |                                                                                                  | 17 |
| B.1                                                                                         | Blank detail specification .....                                                                 | 17 |
| B.1.1                                                                                       | Cable description.....                                                                           | 17 |
| B.1.2                                                                                       | Cable element .....                                                                              | 18 |
| B.1.3                                                                                       | Cable construction .....                                                                         | 18 |
| B.1.4                                                                                       | Installation and operating conditions.....                                                       | 18 |
| B.1.5                                                                                       | Mechanical, environmental and fire performance tests.....                                        | 19 |
| B.2                                                                                         | Cables subject to the MICE environmental classification (ISO 11801-3 and related standards)..... | 19 |
| Bibliography.....                                                                           |                                                                                                  | 21 |
| Figure 1 – Example of identification by means of colour coding and positioning .....        |                                                                                                  | 9  |
| Figure A.1 – Example of cross-section of a four-fibre ribbon cable .....                    |                                                                                                  | 16 |
| Table 1 – Dimensions of optical fibre ribbon cables .....                                   |                                                                                                  | 10 |
| Table 2 – Temperature cycling conditions .....                                              |                                                                                                  | 12 |
| Table 3 – Common single-mode fibre requirements .....                                       |                                                                                                  | 13 |
| Table 4 – Cabled attenuation requirements for B1.1 optical fibre .....                      |                                                                                                  | 13 |
| Table 5 – Cabled attenuation requirements for B1.2 optical fibre .....                      |                                                                                                  | 13 |
| Table 6 – Cabled attenuation requirements for B1.3 optical fibre .....                      |                                                                                                  | 14 |
| Table 7 – Cabled attenuation requirements for B2 optical fibre .....                        |                                                                                                  | 14 |
| Table 8 – Cabled attenuation requirements for B4 optical fibre .....                        |                                                                                                  | 14 |
| Table 9 – Cabled attenuation requirements for B5 optical fibre .....                        |                                                                                                  | 14 |
| Table 10 – Cabled attenuation requirements for B6 optical fibre .....                       |                                                                                                  | 15 |
| Table 11 – Requirements for multimode optical fibre (A1a and A1b) .....                     |                                                                                                  | 15 |
| Table B.1 – Cable description .....                                                         |                                                                                                  | 17 |
| Table B.2 – Cable element.....                                                              |                                                                                                  | 18 |
| Table B.3 – Cable construction .....                                                        |                                                                                                  | 18 |
| Table B.4 – Installation and operating conditions .....                                     |                                                                                                  | 19 |
| Table B.5 – Tests applicable.....                                                           |                                                                                                  | 19 |

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IEC 60793-1-40, *Optical fibres – Part 1-40: Measurement methods and test procedures – Attenuation*

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

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

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

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.

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

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

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

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 60811-504, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 504: Mechanical tests – Bending tests at low temperature for insulation and sheaths*

## SOMMAIRE

|                                                                        |    |
|------------------------------------------------------------------------|----|
| AVANT-PROPOS .....                                                     | 24 |
| 1 Domaine d'application .....                                          | 26 |
| 2 Références normatives .....                                          | 26 |
| 3 Termes et définitions .....                                          | 27 |
| 4 Construction .....                                                   | 27 |
| 4.1 Généralités .....                                                  | 27 |
| 4.2 Fibres optiques et revêtement primaire .....                       | 28 |
| 4.3 Matelas protecteur .....                                           | 28 |
| 4.4 Fibre renforcée .....                                              | 28 |
| 4.5 Jonc rainuré .....                                                 | 28 |
| 4.6 Tube .....                                                         | 28 |
| 4.7 Tube assemblé à structure libre .....                              | 28 |
| 4.8 Structure en ruban .....                                           | 28 |
| 4.9 Renfort de traction et d'anti-déformation .....                    | 28 |
| 4.10 Filin de déchirement .....                                        | 28 |
| 4.11 Gaine .....                                                       | 28 |
| 4.12 Marquage de la gaine .....                                        | 28 |
| 4.13 Identification .....                                              | 28 |
| 4.14 Exemple de construction de câble .....                            | 29 |
| 5 Dimensions .....                                                     | 29 |
| 5.1 Fibres optiques et revêtement primaire .....                       | 29 |
| 5.2 Géométrie structurelle du ruban .....                              | 29 |
| 5.3 Câble à rubans de fibres optiques .....                            | 29 |
| 6 Essais .....                                                         | 30 |
| 6.1 Généralités .....                                                  | 30 |
| 6.2 Dimensions .....                                                   | 30 |
| 6.3 Exigences mécaniques .....                                         | 30 |
| 6.3.1 Résistance du câble à la traction .....                          | 30 |
| 6.3.2 Ecrasement du câble .....                                        | 31 |
| 6.3.3 Chocs sur le câble .....                                         | 31 |
| 6.3.4 Courbure du câble .....                                          | 31 |
| 6.3.5 Courbure répétée du câble .....                                  | 31 |
| 6.3.6 Courbure sous tension du câble .....                             | 31 |
| 6.3.7 Courbure à basse température du câble .....                      | 32 |
| 6.3.8 Flexion du câble .....                                           | 32 |
| 6.3.9 Torsion du câble .....                                           | 32 |
| 6.3.10 Vrillage du câble .....                                         | 32 |
| 6.4 Exigences environnementales – Cycles de température .....          | 32 |
| 6.5 Exigences de transmission .....                                    | 33 |
| 6.5.1 Généralités .....                                                | 33 |
| 6.5.2 Fibres optiques unimodales .....                                 | 33 |
| 6.5.3 Fibres optiques unimodales à dispersion non décalée (B1.1) ..... | 33 |
| 6.5.4 Fibres optiques unimodales à dispersion non décalée (B1.2) ..... | 34 |
| 6.5.5 Fibres optiques unimodales à dispersion non décalée (B1.3) ..... | 34 |
| 6.5.6 Fibres optiques unimodales à dispersion décalée (B2) .....       | 34 |

|                                                                                                                  |                                                                                         |    |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----|
| 6.5.7                                                                                                            | Fibres optiques unimodales à dispersion non nulle (B4).....                             | 34 |
| 6.5.8                                                                                                            | Fibres optiques unimodales à dispersion non nulle à large bande (B5) .....              | 35 |
| 6.5.9                                                                                                            | Fibres optiques unimodales insensibles aux pertes par courbure (B6) .....               | 35 |
| 6.5.10                                                                                                           | Fibres multimodales.....                                                                | 35 |
| 6.6                                                                                                              | Comportement au feu .....                                                               | 35 |
| Annexe A (informative) Exemple de construction de câble .....                                                    |                                                                                         | 37 |
| Annexe B (informative) Spécification de famille pour câbles intérieurs – Câbles à rubans de fibres optiques..... |                                                                                         | 38 |
| B.1                                                                                                              | Spécification particulière-cadre .....                                                  | 38 |
| B.1.1                                                                                                            | Description des câbles.....                                                             | 38 |
| B.1.2                                                                                                            | Élément de câble .....                                                                  | 39 |
| B.1.3                                                                                                            | Construction du câble .....                                                             | 40 |
| B.1.4                                                                                                            | Conditions d'installation et conditions de fonctionnement.....                          | 40 |
| B.1.5                                                                                                            | Essais de performances mécaniques, d'environnement et au feu.....                       | 41 |
| B.2                                                                                                              | Câbles soumis au classement d'environnement MICE (ISO 11801-3 et normes associées)..... | 42 |
| Bibliographie.....                                                                                               |                                                                                         | 43 |
| Figure 1 – Exemple de codification par couleurs et par le positionnement.....                                    |                                                                                         | 29 |
| Figure A.1 – Exemple de coupe transversale d'un câble à ruban de fibres optiques à quatre fibres .....           |                                                                                         | 37 |
| Tableau 1 – Dimensions des câbles à rubans de fibres optiques.....                                               |                                                                                         | 30 |
| Tableau 2 – Conditions des cycles de températures .....                                                          |                                                                                         | 33 |
| Tableau 3 – Exigences communes sur les fibres unimodales .....                                                   |                                                                                         | 33 |
| Tableau 4 – Exigences sur l'affaiblissement des câbles pour les fibres optiques B1.1.....                        |                                                                                         | 33 |
| Tableau 5 – Exigences sur l'affaiblissement des câbles pour les fibres optiques B1.2.....                        |                                                                                         | 34 |
| Tableau 6 – Exigences sur l'affaiblissement des câbles pour les fibres optiques B1.3.....                        |                                                                                         | 34 |
| Tableau 7 – Exigences sur l'affaiblissement des câbles pour les fibres optiques B2.....                          |                                                                                         | 34 |
| Tableau 8 – Exigences sur l'affaiblissement des câbles pour les fibres optiques B4.....                          |                                                                                         | 34 |
| Tableau 9 – Exigences sur l'affaiblissement des câbles pour les fibres optiques B5.....                          |                                                                                         | 35 |
| Tableau 10 – Exigences sur l'affaiblissement des câbles pour les fibres optiques B6.....                         |                                                                                         | 35 |
| Tableau 11 – Exigences pour les fibres optiques multimodales (A1a et A1b) .....                                  |                                                                                         | 35 |
| Tableau B.1 – Description des câbles .....                                                                       |                                                                                         | 38 |
| Tableau B.2 – Élément de câble .....                                                                             |                                                                                         | 39 |
| Tableau B.3 – Élément de câble .....                                                                             |                                                                                         | 40 |
| Tableau B.4 – Conditions d'installation et conditions de fonctionnement .....                                    |                                                                                         | 41 |
| Tableau B.5 – Essais applicables.....                                                                            |                                                                                         | 41 |

## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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### CÂBLES À FIBRES OPTIQUES –

#### **Partie 2-30: Câbles intérieurs – Spécification de famille pour les câbles à rubans de fibres optiques utilisés dans les assemblages de câbles connectés**

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La Norme internationale IEC 60794-2-30 a été établie par le sous-comité 86A: Fibres et câbles, du comité d'études 86 de l'IEC: Fibres optiques.

Cette troisième édition annule et remplace la deuxième édition parue en 2008. Cette édition constitue une révision technique.

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

- a) retrait de l'Annexe C;
- b) référence aux normes les plus récentes relatives aux fibres;

c) référence à l'IEC 60794-1-21, l'IEC 60794-1-22, l'IEC 60794-1-23 et l'IEC 60794-1-24.

La présente norme doit être utilisée conjointement avec l'IEC 60794-1-1, l'IEC 60794-1-2 et l'IEC 60794-2.

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

| CDV          | Rapport de vote |
|--------------|-----------------|
| 86A/1704/CDV | 86A/1808/RVC    |

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de la présente Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

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 "<http://webstore.iec.ch>" dans les données relatives au document recherché. A cette date, le document sera

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## CÂBLES À FIBRES OPTIQUES –

### Partie 2-30: Câbles intérieurs –

### Spécification de famille pour les câbles à rubans de fibres optiques utilisés dans les assemblages de câbles connectorisés

## 1 Domaine d'application

Cette partie de l'IEC 60794 est une spécification de famille qui couvre les câbles à rubans de fibres optiques intérieurs pour usage dans les assemblages de câbles connectorisés. Les exigences de la spécification intermédiaire IEC 60794-2 sont applicables aux câbles couverts par le présent document.

Les exigences présent document sont écrites pour définir un câble à ruban plat. Le présent document peut être applicable à d'autres constructions de câbles. Les parties de l'IEC 60794-3 qui sont applicables pour les essais de rubans constituent le sujet de l'IEC 60794-1-31.

L'Annexe B contient des exigences qui remplacent les exigences normales dans le cas où les câbles sont destinés à être utilisés dans une installation régie par le tableau MICE de l'ISO 11801-3 [4]<sup>1</sup>.

## 2 Références normatives

Les documents suivants cités dans le texte 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).

NOTE Ces références complètent les références normatives déjà présentées dans les spécifications génériques (IEC 60794-1-1 et IEC 60794-1-2).

IEC 60304, *Couleurs de référence de l'enveloppe isolante pour câbles et fils pour basses fréquences*

IEC 60793-1-20, *Fibres optiques – Partie 1-20: Méthodes de mesure et procédures d'essai – Géométrie de la fibre*

IEC 60793-1-40, *Fibres optiques – Partie 1-40: Méthodes de mesure et procédures d'essai – Affaiblissement*

IEC 60793-1-44, *Fibres optiques – Partie 1-44: Méthodes de mesure et procédures d'essai – Longueur d'onde de coupure*

IEC 60793-2, *Fibres optiques – Partie 2: Spécifications de produits – Généralités*

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

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

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<sup>1</sup> Les nombres entre crochets font référence à la bibliographie.

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 60794-1-21, *Optical fibre cables – Part 1-21: Generic specification – Basic optical cable test procedures – Mechanical test methods* (disponible en anglais seulement)

IEC 60794-1-22, *Câbles à fibres optiques – Partie 1-22: Spécification générique – Procédures fondamentales d'essais des câbles optiques – Méthodes d'essais d'environnement*

IEC 60794-1-23, *Optical fibre cables – Part 1-23: Generic specification – Basic optical cable test procedures – Cable element test methods* (disponible en anglais seulement)

IEC 60794-2:2017, *Câbles à fibres optiques – Partie 2: Câbles intérieurs – Spécification intermédiaire*

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

IEC 60811-202, *Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux non métalliques – Partie 202: Essais généraux – Mesure de l'épaisseur des gaines non métalliques*

IEC 60811-203, *Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux non métalliques – Partie 203: Essais généraux – Mesure des dimensions extérieures*

IEC 60811-504, *Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux non métalliques – Partie 504: Essais mécaniques – Essai d'enroulement à basse température pour les enveloppes isolantes et les gaines*