

This is a preview - click here to buy the full publication



IEC 60794-2-42

Edition 1.0 2008-04

# INTERNATIONAL STANDARD

---

**Optical fibre cables –  
Part 2-42: Indoor optical fibre cables – Product specification for simplex and  
duplex cables with A4 fibres**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

PRICE CODE

T

---

ICS 33.180.10

ISBN 2-8318-9679-7

## CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references .....	5
3 Construction.....	6
3.1 General.....	6
3.2 Optical fibres.....	6
3.3 Buffer.....	6
3.4 Ruggedized fibre.....	6
3.5 Tube.....	6
3.6 Strength and anti-buckling members .....	7
3.7 Sheath .....	7
3.8 Sheath marking .....	7
3.9 Examples of cable constructions .....	7
4 Tests.....	7
4.1 General.....	7
4.2 Dimensions .....	7
4.3 Mechanical requirements.....	7
4.4 Environmental requirements – Temperature cycling .....	10
4.5 Transmission requirements .....	10
4.6 Fire performance.....	10
Annex A (informative) Examples of cable constructions .....	11
Annex B (informative) Blank Detail Specification (BDS) .....	14
Bibliography.....	24
Figure A.1 – Simplex loose non-buffered fibre cable .....	11
Figure A.2 – Simplex ruggedized fibre cable .....	11
Figure A.3 – Duplex loose non-buffered fibre cable.....	11
Figure A.4 – Duplex ruggedized fibre cable.....	12
Figure A.5 – Duplex ruggedized fibre zip cord.....	12
Figure A.6 – Duplex flat cable.....	12
Figure A.7 – Duplex round cable.....	13
Figure A.8 – Duplex flat cable.....	13
Table 1 – Temperature cycling.....	10

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**OPTICAL FIBRE CABLES –**

**Part 2-42: Indoor optical fibre cables –  
Product specification for simplex and duplex cables with A4 fibres**

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 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.
- 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.

International Standard IEC 60794-2-42 has been prepared by sub-committee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

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 standard is based on the following documents:

CDV	Report on voting
86A/1126/CDV	86A/1155/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A blank detail specification is provided in Annex B.

A list of all parts of 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 publication will remain unchanged until the maintenance result date indicated on the IEC web site under “<http://webstore.iec.ch>” in the data related to the specific publication. At this date, the publication will be:

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

## OPTICAL FIBRE CABLES –

### Part 2-42: Indoor optical fibre cables – Product specification for simplex and duplex cables with A4 fibres

#### 1 Scope

This part of IEC 60794 covers simplex and duplex optical fibre cables containing A4 fibres for indoor use. The requirements of the sectional specification IEC 60794-2 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 60189-1: *Low-frequency cables and wires with PVC insulation and PVC sheath – Part 1: General test and measuring methods*

IEC 60654-4, *Operating conditions for industrial-process measurement and control equipment – Part 4: Corrosive and erosive influences*

IEC 60721-1, *Classification of environmental conditions – Part 1: Environmental parameters and their severities*

IEC 60721-3-3, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weather protected locations*

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

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

IEC 60793-2-40, *Optical fibres – Part 2-40: Product specifications – Sectional specification for category A4 multimode 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*

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

IEC 60811-1-1, *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 4: Tests at low temperature*

IEC 61000-2-5, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 5: Classification of electromagnetic environments – Basic EMC publication*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61326 (all parts), *Electrical equipment for measurement, control and laboratory use – EMC*

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

ISO/IEC 24702: *Information technology – Generic cabling – Industrial premises*