



# SLOVENSKI STANDARD SIST EN 60794-2-41:2008

01-december-2008

Cd[h] b]\_UV]!'&(%XY.'?UV]nUbcfUb'c'i dcfUvc!'GdYWZ\_UW]nXY\_UnUj`U\_bU  
5('g'g]a d`Y\_gb]a `]b`Xi d`Y\_gb]a `c`U Yj Ub]\_ca `f97 \* \$+- (!&(%&\$\$, Ł

Optical fibre cables - Part 2-41: Indoor cables - Product specification for simplex and duplex buffered A4 fibres (IEC 60794-2-41:2008)

Lichtwellenleiterkabel - Teil 2-41: Innenkabel - Produktspezifikation für ummantelte Simplex- und Duplexfasern der Kategorie A4 (IEC 60794-2-41:2008)

Câbles à fibres optiques - Partie 2-41: Câbles intérieurs - Spécification de produit pour câbles simplex et duplex munis de fibres A4 sous revêtement protecteur (CEI 60794-2-41:2008)

<https://standards.iteh.ai/catalog/standards/sist/ed1490c2-2356-4296-a713-2a8f8ed9fd2d/sist-en-60794-2-41-2008>

Ta slovenski standard je istoveten z: **EN 60794-2-41:2008**

### ICS:

33.180.10      Q] cã } aDã } aã Á aã|ã      Fibres and cables

**SIST EN 60794-2-41:2008**                      en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 60794-2-41:2008

<https://standards.iteh.ai/catalog/standards/sist/ed1490c2-2356-4296-a713-2a8f8ed9fd2d/sist-en-60794-2-41-2008>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60794-2-41**

September 2008

ICS 33.180.10

English version

**Optical fibre cables -  
Part 2-41: Indoor cables -  
Product specification for simplex and duplex buffered A4 fibres  
(IEC 60794-2-41:2008)**

Câbles à fibres optiques -  
Partie 2-41: Câbles intérieurs -  
Spécification de produit pour câbles  
simplex et duplex munis de fibres A4  
sous revêtement protecteur  
(CEI 60794-2-41:2008)

Lichtwellenleiterkabel -  
Teil 2-41: Innenkabel -  
Produktspezifikation für ummantelte  
Simplex- und Duplexfasern  
der Kategorie A4  
(IEC 60794-2-41:2008)

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

This European Standard was approved by CENELEC on 2008-08-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 86A/1215/FDIS, future edition 1 of IEC 60794-2-41, prepared by SC 86A, Fibres and cables, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60794-2-41 on 2008-08-01.

This standard is to be used in conjunction with EN 60794-1-1 and EN 60794-1-2, and EN 60794-2. A blank detail specification is provided in Annex A.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2009-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2011-08-01

Annex ZA has been added by CENELEC.

---

## Endorsement notice

The text of the International Standard IEC 60794-2-41:2008 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60654	NOTE	Harmonized in EN 60654 series (not modified).
IEC 60654-4	NOTE	Harmonized as EN 60654-4:1997 (not modified).
IEC 60721	NOTE	Harmonized in EN 60721 series (not modified).
IEC 60721-1	NOTE	Harmonized as EN 60721-1:1995 (not modified).
IEC 60721-3-3	NOTE	Harmonized as EN 60721-3-3:1995 (not modified).
IEC 60793-1-40	NOTE	Harmonized as EN 60793-1-40:2003 (modified).
IEC 60793-1-41	NOTE	Harmonized as EN 60793-1-41:2003 (not modified).
IEC 60794-2-40	NOTE	Harmonized as EN 60794-2-40:2008 (not modified).
IEC 61000-6-2	NOTE	Harmonized as EN 61000-6-2:2005 (not modified).
IEC 61326	NOTE	Harmonized in EN 61326 series (not modified).
IEC 61918	NOTE	Harmonized as EN 61918:2008 (modified).

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60189-1	- <sup>1)</sup>	Low-frequency cables and wires with PVC insulation and PVC sheath - Part 1: General test and measuring methods	-	-
IEC 60793-1-20	- <sup>1)</sup>	Optical fibres - Part 1-20: Measurement methods and test procedures - Fibre geometry	EN 60793-1-20	2002 <sup>2)</sup>
IEC 60793-1-21	- <sup>1)</sup>	Optical fibres - Part 1-21: Measurement methods and test procedures - Coating geometry	EN 60793-1-21	2002 <sup>2)</sup>
IEC 60793-1-46	- <sup>1)</sup>	Optical fibres - Part 1-46: Measurement methods and test procedures - Monitoring of changes in optical transmittance	EN 60793-1-46	2002 <sup>2)</sup>
IEC 60793-1-50	- <sup>1)</sup>	Optical fibres - Part 1-50: Measurement methods and test procedures - Damp heat (steady state)	EN 60793-1-50	2002 <sup>2)</sup>
IEC 60793-1-51	- <sup>1)</sup>	Optical fibres - Part 1-51: Measurement methods and test procedures - Dry heat	EN 60793-1-51	2002 <sup>2)</sup>
IEC 60793-1-52	- <sup>1)</sup>	Optical fibres - Part 1-52: Measurement methods and test procedures - Change of temperature	EN 60793-1-52	2002 <sup>2)</sup>
IEC 60793-2-40	- <sup>1)</sup>	Optical fibres - Part 2-40: Product specifications - Sectional specification for category A4 multimode fibres	EN 60793-2-40	2006 <sup>2)</sup>
IEC 60794-1-1	- <sup>1)</sup>	Optical fibre cables - Part 1-1: Generic specification - General	EN 60794-1-1	2002 <sup>2)</sup>
IEC 60794-1-2	- <sup>1)</sup>	Optical fibre cables - Part 1-2: Generic specification - Basic optical cable test procedures	EN 60794-1-2	2003 <sup>2)</sup>
IEC 60794-2	2002	Optical fibre cables - Part 2: Indoor cables - Sectional specification	EN 60794-2	2003

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 60794-2-41:2008

<https://standards.iteh.ai/catalog/standards/sist/ed1490c2-2356-4296-a713-2a8f8ed9fd2d/sist-en-60794-2-41-2008>



IEC 60794-2-41

Edition 1.0 2008-06

# INTERNATIONAL STANDARD

Optical fibre cables –

Part 2-41: Indoor cables – Product specification for simplex and duplex buffered A4 fibres

**STANDARD PREVIEW**  
(standards.iteh.ai)

[SIST EN 60794-2-41:2008](https://standards.iteh.ai/catalog/standards/sist/en-60794-2-41-2008)

<https://standards.iteh.ai/catalog/standards/sist/en-60794-2-41-2008>

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

PRICE CODE

**S**

## 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 Strength and anti-buckling members .....	6
3.5 Ripcord .....	6
3.6 Sheath .....	6
3.7 Marking.....	6
3.8 Identification.....	6
3.9 Examples of constructions.....	6
4 Dimensions .....	7
5 Tests.....	7
5.1 General.....	7
5.2 Dimensions .....	7
5.3 Mechanical requirements.....	7
5.3.1 General.....	7
5.3.2 Tensile performance.....	8
5.3.3 Crush .....	8
5.3.4 Impact.....	8
5.3.5 Bend.....	8
5.3.6 Repeated bending .....	9
5.3.7 Bend at low temperature.....	9
5.3.8 Flexing .....	9
5.3.9 Torsion.....	9
5.3.10 Kink.....	9
5.4 Environmental requirements.....	9
5.4.1 Mechanical environmental requirement.....	10
5.4.2 Transmission environmental requirements.....	11
5.5 Transmission requirements .....	11
5.6 Fire performance.....	11
Annex A (informative) Blank detail specification.....	12
Bibliography.....	22
Figure 1 – Examples of buffered fibres.....	7
Table 1 – Dimensions of buffered fibre.....	7
Table 2 – Minimum tensile load for 4 % elongation .....	8
Table 3 – Environmental exposure tests .....	10
Table 4 – Attributes measured .....	10
Table 5 – Requirement for tensile strength.....	10
Table 6 – Requirement for change in attenuation .....	11
Table A.1 – Required tests.....	19



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OPTICAL FIBRE CABLES –

**Part 2-41: Indoor cables –  
Product specification for simplex and duplex buffered 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 60794-2-41 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 and IEC 60794-1-2, and IEC 60794-2. A blank detail specification is provided in Annex A.

The text of this standard is based on the following documents:

FDIS	Report on voting
86A/1215/FDIS	86A/1227/RVD

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 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.

## **iTeh STANDARD PREVIEW (standards.iteh.ai)**

[SIST EN 60794-2-41:2008](https://standards.iteh.ai/catalog/standards/sist/en-60794-2-41-2008)

<https://standards.iteh.ai/catalog/standards/sist/en-60794-2-41-2008>

## OPTICAL FIBRE CABLES –

### Part 2-41: Indoor cables – Product specification for simplex and duplex buffered A4 fibres

#### 1 Scope

This part of IEC 60794 covers simplex and duplex buffered A4a through A4g fibres for indoor use. These may be cut into short lengths, which can be used in patchcord cable assemblies. The requirements of 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 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 60793-1-46, *Optical fibres – Part 1-46: Measurement methods and test procedures – Monitoring of changes in optical transmittance*

IEC 60793-1-50, *Optical fibres – Part 1-50: Measurement methods and test procedures – Damp heat (steady state)*

IEC 60793-1-51, *Optical fibres – Part 1-51: Measurement methods and test procedures – Dry heat*

IEC 60793-1-52, *Optical fibres – Part 1-52: Measurement methods and test procedures – Change of temperature*

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 60794-2:2002, *Optical fibre cables – Part 2: Indoor cables – Sectional specification*