

# SLOVENSKI STANDARD

## SIST EN 60794-3-60:2009

01-februar-2009

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Optical fibre cables - Part 3-60: Outdoor cables - Family specification for drinking water pipe cables and subducts for installation by blowing and/or pulling/dragging/floating in drinking water pipes (IEC 60794-3-60:2008)

Lichtwellenleiterkabel - Teil 3-60: Außenkabel - Familienspezifikation für Kabel in Trinkwasserleitungen und Schächten für die Verlegung durch Einblasen und/oder Einschieben/Einziehen/Eingleiten in Trinkwasserleitungen (IEC 60794-3-60:2008)

Câbles à fibres optiques - Partie 3-60: Câbles extérieurs - Spécification de famille relative aux câbles et sous-conduits cheminant dans les conduites d'eau potable destinés à être installés par soufflage et/ou par tirage/appareillage trainant/flottage dans les conduites d'eau potable (CEI 60794-3-60:2008)

**Ta slovenski standard je istoveten z: EN 60794-3-60:2008**

### ICS:

33.180.10      C] cã } æD|æ } æÅ Á æ|ã      Fibres and cables

**SIST EN 60794-3-60:2009**

**en**

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

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**Optical fibre cables -  
Part 3-60: Outdoor cables -  
Family specification for drinking water pipe cables and subducts  
for installation by blowing and/or pulling/dragging/floating  
in drinking water pipes  
(IEC 60794-3-60:2008)**

Câbles à fibres optiques -  
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Lichtwellenleiterkabel -  
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Familienspezifikation  
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This European Standard was approved by CENELEC on 2008-11-01. 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/1232/FDIS, future edition 1 of IEC 60794-3-60, 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 60794-3-60 on 2008-11-01.

This standard is to be used in conjunction with EN 60794-1-1, EN 60794-1-2 and EN 60794-3.

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) 2009-08-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2011-11-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 60794-3-60:2008 was approved by CENELEC as a European Standard without any modification.

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## 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 60304	1982	Standard colours for insulation for low-frequency cables and wires	HD 402 S2	1984
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 60793-1-40 (mod)	- <sup>1)</sup>	Optical fibres - Part 1-40: Measurement methods and test procedures - Attenuation	EN 60793-1-40	2003 <sup>2)</sup>
IEC 60793-1-44	- <sup>1)</sup>	Optical fibres - Part 1-44: Measurement methods and test procedures - Cut-off wavelength	EN 60793-1-44	2002 <sup>2)</sup>
IEC 60793-2	- <sup>1)</sup>	Optical fibres - Part 2: Product specifications - General	EN 60793-2	2008 <sup>2)</sup>
IEC 60793-2-50	- <sup>1)</sup>	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	2008 <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 60794-3	- <sup>1)</sup>	Optical fibre cables - Part 3: Sectional specification - Outdoor cables	EN 60794-3	2002 <sup>2)</sup>
IEC 60794-3-10 (mod)	- <sup>1)</sup>	Optical fibre cables - Part 3-10: Outdoor cables - Family specification for duct and directly buried optical telecommunication cables	EN 60794-3-10	2002 <sup>2)</sup>
IEC 60811-1-1	1993	Insulating and sheathing materials of electric and optical cables - Common test methods - Part 1-1: General application - Measurement of thickness and overall dimensions - Tests for determining the mechanical properties	EN 60811-1-1	1995

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

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60811-5-1 (mod)	1990	Insulating and sheathing materials of electric and optical cables - Common test methods - Part 5-1: Methods specific to filling compounds - Drop point - Separation of oil - Lower temperature brittleness - Total acid number - Absence of corrosive components - Permittivity at 23 °C - D.C. resistivity at 23 °C and 100 °C	EN 60811-5-1	1999
IEC 62305-1	- <sup>1)</sup>	Protection against lightning - Part 1: General principles	EN 62305-1 + corr. November	2006 <sup>2)</sup> 2006

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# INTERNATIONAL STANDARD

Optical fibre cables –

**Part 3-60: Outdoor cables – Family specification for drinking water pipe cables and subducts for installation by blowing and/or pulling/dragging/floating in drinking water pipes**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OPTICAL FIBRE CABLES –

**Part 3-60: Outdoor cables –  
Family specification for drinking water pipe  
cables and subducts for installation by blowing and/or  
pulling/dragging/floating in drinking water pipes**

## 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.

International Standard IEC 60794-3-60 has been prepared by subcommittee 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 60794-3.

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

FDIS	Report on voting
86A/1232/FDIS	86A/1243/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 IEC 60794 series, 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.

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## OPTICAL FIBRE CABLES –

### Part 3-60: Outdoor cables – Family specification for drinking water pipe cables and subducts for installation by blowing and/or pulling/dragging/floating in drinking water pipes

#### 1 Scope

This part of IEC 60794 is a family specification that covers drinking water pipe cables and subducts for installation by blowing and/or pulling/dragging/floating in drinking water pipes. Systems built with components covered by this standard are subject to the requirements of sectional specification IEC 60794-3.

Drinking water pipe cable and subduct constructions have to meet the different requirements of the drinking water companies and/or associations regarding chemical, environmental, operational interactions and in general maintenance conditions.

A table of preferential applications, describing drinking water pipe cable characteristics versus methods of installation is reported in Annex A for drinking water pipe cables.

Clause 4 describes a blank detail specification for drinking water pipe cables and subducts for installation by blowing and/or pulling/dragging/floating in drinking water pipes. It incorporates some minimum requirements.

Detail specifications may be prepared on the basis of this family specification.

The parameters specified in this standard may be affected by measurement uncertainty arising either from measurement errors or calibration errors due to lack of suitable standards. Acceptance criteria should be interpreted with respect to this consideration.

The number of fibres tested is representative of the drinking water line cable and should be agreed between the customer and the supplier.

#### 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 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*