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STN	**Optické káble. Časť 4-10: Skupinová špecifikácia. OPWG (Optical Ground Wires) pre silnoprúdové vedenia.**	**STN EN 60794-4-10** 35 9223

Optical fibre cables - Part 4-10: Family specification - Optical ground wires (OPGW) along electrical power lines

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 07/15

Obsahuje: EN 60794-4-10:2014, IEC 60794-4-10:2014

Oznámením tejto normy sa od 03.12.2017 ruší
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60794-4-10

December 2014

ICS 33.180.10

Supersedes EN 60794-4-10:2007

English Version

Optical fibre cables - Part 4-10: Family specification - Optical ground wires (OPGW) along electrical power lines (IEC 60794-4-10:2014)

Câbles à fibres optiques - Partie 4-10: Spécification de famille - Câbles de garde à fibres optiques (OPGW - Optical Ground Wires) le long des lignes électriques de puissance (CEI 60794-4-10:2014)

Lichtwellenleiterkabel - Teil 4-10: Familienspezifikation - OPWG (Optical Ground Wires) Lichtwellenleiter-Erdseile auf Starkstromleitungen (IEC 60794-4-10:2014)

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

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 60794-4-10:2014 E

Foreword

The text of document 86A/1594/CDV, future edition 2 of IEC 60794-4-10, prepared by SC 86A "Fibres and cables" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60794-4-10:2014.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-09-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-12-03

This document supersedes EN 60794-4-10:2007.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60794-4-10:2014 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 60794-1-20	NOTE	Harmonized as EN 60794-1-20.
IEC 60794-1-23	NOTE	Harmonized as EN 60794-1-23.
ISO 9001	NOTE	Harmonized as EN ISO 9001.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60104	-	Aluminium-magnesium-silicon alloy wire for overhead line conductors	-	-
IEC 60304	-	Standard colours for insulation for low-frequency cables and wires	HD 402 S2	-
IEC 60793	series	Optical fibres	EN 60793	series
IEC 60793-1-40	-	Optical fibres - Part 1-40: Measurement methods and test procedures - Attenuation	EN 60793-1-40	-
IEC 60793-1-44	-	Optical fibres - Part 1-44: Measurement methods and test procedures - Cut-off wavelength	EN 60793-1-44	-
IEC 60793-1-48	-	Optical fibres - Part 1-48: Measurement methods and test procedures - Polarization mode dispersion	EN 60793-1-48	-
IEC 60793-2-50	-	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	-
IEC 60794-1-1	-	Optical fibre cables - Part 1-1: Generic specification - General	EN 60794-1-1	-
IEC 60794-1-21	- [1)]	Optical fibre cables - Part 1-21: Generic specification - Basic optical cable test procedures - Mechanical tests methods	FprEN 60794-1-21	- [1)]
IEC 60794-1-22	2012	Optical fibre cables - Part 1-22: Generic specification - Basic optical cable test procedures - Environmental test methods	EN 60794-1-22	2012

[1)] At draft stage.

Publication	Year	Title	EN/HD	Year
IEC 60794-1-24	2014	Optical fibre cables - Part 1-24: Generic specification - Basic optical cable test procedures - Electrical test methods	EN 60794-1-24	2014
IEC 60794-4	2003	Optical fibre cables - Part 4: Sectional specification - Aerial optical cables along electrical power lines	EN 60794-4	2003
IEC 60888	-	Zinc-coated steel wires for stranded conductors	-	-
IEC 60889	-	Hard-drawn aluminium wire for overhead line conductors	EN 60889	-
IEC 61089	1991	Round wire concentric lay overhead electrical stranded conductors	-	-
IEC 61232	-	Aluminium-clad steel wires for electrical purposes	EN 61232	-
IEC 61394	-	Overhead lines - Requirements for greases for aluminium, aluminium alloy and steel bare conductors	EN 61394	-
IEC 61395	-	Overhead electrical conductors - Creep test procedures for stranded conductors	EN 61395	-

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Optical fibre cables –
Part 4-10: Family specification – Optical ground wires (OPGW) along electrical power lines

IEC 60794-4-10:2014-10(en)

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INTERNATIONAL STANDARD

colour inside

Optical fibre cables –
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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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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 60794-4-10 has been prepared by subcommittee 86A: Fibres and Cables, of IEC technical committee 86. Fibre optics

This second edition cancels and replaces the first edition published in 2006 and constitutes a technical revision.

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

a) galloping test (9.7) has been added to the type tests list;
b) update of definitions clause; maximum installation tension (MIT) defined and used in the sheave test description;
c) definition of characterization of OPGW's mechanical behaviour in order to provide information useful for electrical power transmission lines designers;

d) improved definition of lightning test parameters and conditions to improve reproducibility among different laboratories.

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

CDV	Report on voting
86A/1594/CDV	86A/1627/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 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 publication will remain unchanged until the stability 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

OPTICAL FIBRE CABLES –

Part 4-10: Family specification – Optical ground wires (OPGW) along electrical power lines

1 Scope

This part of IEC 60794-4, which is a family specification, covers cable construction, test methods and optical, mechanical, environmental and electrical performance requirements for OPGW (optical ground wire) which is used for the protection of electrical power lines against atmospheric discharges or short-circuits and, at the same time, as a high bandwidth transport media for communications-and-control optical signals. The corresponding environmental declaration may be built according to IEC TR 62839-1.

The OPGW is a substitute for a conventional ground-/shield-wire containing optical fibres for control and/or telecommunication purposes. Usually the fibres are embedded loosely in protective buffer tubes. To fulfil mechanical and electrical requirements; an armouring of one or more layers with aluminium, aluminium alloy, and aluminium clad steel, galvanized steel or a mixture of them is helically stranded. If the construction contains an aluminium tube or an aluminium slotted core, this cross section is considered as a conductive part.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60104, *Aluminium-magnesium-silicon alloy wire for overhead line conductors*

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

IEC 60793 (all parts), *Optical fibres*

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 60793-1-48, *Optical fibres – Part 1-48: Measurement methods and test procedures – Polarizationn mode dispersion*

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

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

IEC 60794-1-21, *Optical fibre cables – Part 1-21: Generic specification – Basic optical cable test procedures –Mechanical test methods*[1]

IEC 60794-1-22:2012, *Optical fibre cables – Part 1-22: Generic specification – Basic optical cable test procedures –Environmental test methods*

IEC 60794-1-24:2014, *Optical fibre cables – Part 1-24: Generic specification – Basic optical cable test procedures – Electrical testmethods*

IEC 60794-4:2003, *Optical fibre cables – Part 4: Sectional specification – Aerial optical cables along electrical power lines*

IEC 60888, *Zin-coated steel wires for stranded conductors*

IEC 60889, *Hard-drawn aluminium wire for overherad line conductors*

IEC 61089:1991, *Round wire concentric lay overhead electrical stranded conductors*

IEC 61232, *Aluminium-clad steel wires for electrical purposes*

IEC 61394, *Overhead lines – Characteristics of greases for aluminium, aluminium alloy and steel bare conductors*

IEC 61395, *Overhead electrical conductors – Creep test procedures for stranded conductors*

1 To be published.