

**Optical fibre cables - Part 3-12: Outdoor cables -
Detailed specification for duct and directly buried
optical telecommunication cables for use in premises
cabling (IEC 60794-3-12:2012)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60794-3-12:2013 sisaldab Euroopa standardi EN 60794-3-12:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 60794-3-12:2013 consists of the English text of the European standard EN 60794-3-12:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 28.06.2013.	Date of Availability of the European standard is 28.06.2013.
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English version

**Optical fibre cables -
Part 3-12: Outdoor cables -
Detailed specification for duct and directly buried optical
telecommunication cables for use in premises cabling
(IEC 60794-3-12:2012)**

Câbles à fibres optiques -
Partie 3-12: Câbles extérieurs -
Spécification particulière pour les câbles
optiques de télécommunication destinés à
être installés dans des conduites ou à être
directement enterrés et utilisés dans le
câblage de locaux
(CEI 60794-3-12:2012)

Lichtwellenleiterkabel -
Teil 3-12: LWL-Außenkabel -
Produktspezifikation für LWL-Fernmelde-
Erd- und Röhrenkabel für
anwendungsneutrale Standortverkabelung
(IEC 60794-3-12:2012)

This European Standard was approved by CENELEC on 2013-01-16. 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 CEN-CENELEC Management Centre or to any CENELEC member.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 86A/1471/FDIS, future edition 2 of IEC 60794-3-12, 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 60794-3-12:2013.

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) 2013-12-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-01-16

This document supersedes EN 60794-3-12:2006.

EN 60794-3-12:2013 includes the following significant technical changes with respect to EN 60794-3-12:2006:

- reference to ISO/IEC 24702;
- reference to Fibre B6 (EN 60793-2-50);
- reference to Fibre A1a.3 (EN 60793-2-10);
- reference to the OS2 Fibre as defined by ISO/IEC 11801
- reference to the OM4 Fibre as defined by ISO/IEC 11801.

This International Standard is to be used in conjunction with EN 60794-1-1, EN 60794-1-2 and EN 60794-3-10.

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 60794-3-12:2012 was approved by CENELEC as a European Standard without any modification.

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 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 60793-2-10	2011	Optical fibres - Part 2-10: Product specifications - Sectional specification for category A1 multimode fibres	EN 60793-2-10	2011
IEC 60793-2-50	2012	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	2013
IEC 60794-1-1	-	Optical fibre cables - Part 1-1: Generic specification - General	EN 60794-1-1	-
IEC 60794-1-2	-	Optical fibre cables - Part 1-2: Generic specification - Basic optical cable test procedures	EN 60794-1-2	-
IEC 60794-3	-	Optical fibre cables - Part 3: Sectional specification - Outdoor cables	EN 60794-3	-
IEC 60794-3-10	-	Optical fibre cables - Part 3-10: Outdoor cables - Family specification for duct, directly buried and lashed aerial optical telecommunication cables	EN 60794-3-10	-
ISO/IEC 11801	-	Information technology - Generic cabling for customer premises	-	-
ISO/IEC 24702	-	Information technology - Generic cabling - Industrial premises	-	-

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OPTICAL FIBRE CABLES –

Part 3-12: Outdoor cables –

Detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling

1 Scope

This part of IEC 60794 is a detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling to ensure compatibility with ISO/IEC 11801 and ISO/IEC 24702. Those standards have requirements to ensure that models work for generic cabling and system performances. Values in this standard support these models.

The requirements of the family specification IEC 60794-3-10 are applicable to cables covered by this standard. Particular requirements detailed in Clause 4 of this standard either define a specific option relative to the requirements of IEC 60794-3-10 or define additional requirements.

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.

NOTE These references complete the normative references already listed in the generic specifications IEC 60794-1-1 and IEC 60794-1-2, in the sectional specification IEC 60794-3 and in the family specification IEC 60794-3-10.

IEC 60793-2-10:2011, *Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres*

IEC 60793-2-50:2012, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-1-1, *Optical fibre cables – Part 1-1: Generic specification – Cross reference table for optical cable test procedures*

IEC 60794-1-2, *Optical fibre cables – Part 1-2: Generic specification – Cross reference table for optical cable test procedures*¹

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

IEC 60794-3-10, *Optical fibre cables – Part 3-10: Outdoor cables – Family specification for duct, directly buried and lashed aerial optical telecommunication cables*

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

¹ IEC 60794-1-2:2003, Second edition has been withdrawn. A third edition, with the revised title *Optical fibre cables – Part 1-2: Generic specification – Cross reference table for optical cable test procedures*, is currently in preparation.

ISO/IEC 24702, Information technology – Generic cabling – Industrial premises

3 General requirements

The cable shall comply with the family specification, IEC 60794-3-10, and meet the requirements which are defined in it, including requirements in the sectional specification, 60794-3. Particular requirements detailed in Clause 4 are optional, relative to the requirements of IEC 60794-3-10, or define additional requirements.

The optical fibre contained in cables covered by this standard shall comply with one of the following standards, and meet the normative requirements defined within them as applicable:

- IEC 60793-2-50:2008, Annex A (Single-mode fibre category B1.1);
- IEC 60793-2-50:2008, Annex C (Single-mode fibre category B1.3) ;
- IEC 60793-2-50:2008, Annex G (Single-mode fibre sub-categories B6 a1 and B6 a2)
- IEC 60793-2-10:2011, Annex A (Multimode fibre sub-category A1a, 50 µm core diameter);
- IEC 60793-2-10:2011, Annex B (Multimode fibre sub-category A1b, 62,5 µm core diameter).

To ensure compatibility with ISO/IEC 11801 and ISO/IEC 24702, optical performance level requirements are presented in terms of the performance classification codes as follows:

- OS1 Single-mode fibre categories B1.1, B1.3 or sub-categories B6 a1, B6 a2;
- OS2 Single-mode fibre category B1.3 or sub-categories B6 a1, B6 a2;
- OM1 Multimode fibre sub-categories A1a, A1b;
- OM2 Multimode fibre sub-categories A1a, A1b;
- OM3 Multimode fibre model A1a.2;
- OM4 Multimode fibre model A1a.3.

NOTE These codes are informative from the perspective of the requirements defined in this detailed specification.

4 Particular requirements

4.1 General

These requirements either define a specific option relative to the requirements of IEC 60794-3-10 or define additional requirements.

4.2 MICE (mechanical, ingress, climatic and chemical and electromagnetic) characteristics

Cables intended for installation in conformity with ISO/IEC 24702, and related standards, may require the specification of additional tests to ensure their suitability in the applicable environments defined by the mechanical, ingress, climatic and chemical and electromagnetic (MICE) classification. Such tests are outside the scope of IEC 60794 cable specifications, and MICE criteria are not part of the requirements for IEC 60794 specifications. The MICE tests may be the same as, similar to, or substantially different from, the tests required by IEC 60794 specifications. Cables manufactured per IEC 60794 specifications may or may not meet the MICE criteria. For supplemental discussion see IEC/TR 62362 [1]².

² Numbers in square brackets refer to the Bibliography.