Fibre optic interconnecting devices and passive components performance standard -- Part 1: General and guidance for performance standards

Fibre optic interconnecting devices and passive components performance standard -- Part 1: General and guidance for performance standards



EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61753-1:2007 sisaldab Euroopa standardi EN 61753-1:2007 ingliskeelset teksti.

Käesolev dokument on jõustatud 17.12.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 61753-1:2007 consists of the English text of the European standard EN 61753-1:2007.

This document is endorsed on 17.12.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

Käsitlusala:

This part of IEC 61753 deals with performance standards for all passive fibre optic products, including connectors, passive optical components, fibre management systems and closures. The IEC 61753 series is published in multiple parts. This Part 1 covers general information on performance standards. It defines those tests and severities which form the performance categories or general operating service environments and identifies those tests which are considered to be product specific. Test and severity details are given in Annex A. Part 1 also includes references, definitions and rules for creating a performance standard, together with informative annexes, such as a description of test sequencing given in Annex B, and other pertinent information. Subsequent parts which form IEC 61753 are known as performance standards and are numbered according to the classification defined in Annex C. These standards contain the minimum test and measurement severities which a specific product must satisfy, in order to be categorized as meeting the requirements for use in a particular service environment. A product performance standard will contain a combination of those tests and measurements which are common to all passive fibre optic products, for a particular service environment or performance category, and those which are considered specific to that particular product in that environment.

Scope:

This part of IEC 61753 deals with performance standards for all passive fibre optic products, including connectors, passive optical components, fibre management systems and closures. The IEC 61753 series is published in multiple parts. This Part 1 covers general information on performance standards. It defines those tests and severities which form the performance categories or general operating service environments and identifies those tests which are considered to be product specific. Test and severity details are given in Annex A. Part 1 also includes references, definitions and rules for creating a performance standard, together with informative annexes, such as a description of test sequencing given in Annex B, and other pertinent information. Subsequent parts which form IEC 61753 are known as performance standards and are numbered according to the classification defined in Annex C. These standards contain the minimum test and measurement severities which a specific product must satisfy, in order to be categorized as meeting the requirements for use in a particular service environment. A product performance standard will contain a combination of those tests and measurements which are common to all passive fibre optic products, for a particular service environment or performance category, and those which are considered specific to that particular product in that environment.

ICS 33.180.20

Võtmesõnad:

EUROPEAN STANDARD

EN 61753-1

NORME EUROPÉENNE EUROPÄISCHE NORM

November 2007

ICS 33.180.20

Supersedes EN 61753-1-1:2001

English version

Fibre optic interconnecting devices and passive components performance standard -

Part 1: General and guidance for performance standards

(IEC 61753-1:2007)

Norme de qualité de fonctionnement des dispositifs d'interconnexion et composants passifs à fibres optiques -Partie 1: Généralités et lignes directrices relatives aux normes de qualité de fonctionnement (CEI 61753-1:2007) Lichtwellenleiter -Verbindungselemente und passive Bauteile -Betriebsverhalten -Teil 1: Allgemeines und Leitfaden für Betriebsverhaltensnormen (IEC 61753-1:2007)

This European Standard was approved by CENELEC on 2007-10-01. 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 86B/2452/FDIS, future edition 1 of IEC 61753-1, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61753-1 on 2007-10-01.

This European Standard supersedes EN 61753-1-1:2001.

Specific technical changes vis-à-vis EN 61753-1-1:2001 include that EN 61753-1:2007 covers all passive fibre optic products, including connectors, passive optical components, fibre management systems and closures.

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) 2008-07-01

 latest date by which the national standards conflicting with the EN have to be withdrawn

(dow) 2010-10-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61753-1:2007 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60068-1 NOTE Harmonized as EN 60068-1:1994 (not 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.

Publication IEC 60529	Year1)	<u>Title</u> Degrees of protection provided by enclosures (IP Code)	<u>EN/HD</u> EN 60529 + corr. May	<u>Year</u> 1991 ²⁾ 1993
IEC 60590	_ 1)	Determination of the aromatic hydrocarbon content of new mineral insulating oils	HD 382 S1	1979 ²⁾
IEC 61300-2-1	– ¹⁾	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-1: Tests - Vibration (sinusoidal)	EN 61300-2-1	2003 2)
IEC 61300-2-2	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-2: Tests - Mating durability	EN 61300-2-2	2003 2)
IEC 61300-2-4	– ¹⁾	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-4: Tests - Fibre/cable retention	EN 61300-2-4	1997 ²⁾
IEC 61300-2-5	– ¹⁾	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-5: Tests - Torsion/twist	EN 61300-2-5	2002 2)
IEC 61300-2-6	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-6: Tests - Tensile strength of coupling mechanism	EN 61300-2-6	1997 ²⁾
IEC 61300-2-7	1995	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-7: Tests - Bending moment	EN 61300-2-7	1997
IEC 61300-2-9	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-9: Tests - Shock	EN 61300-2-9	1997 ²⁾

²⁾ Valid edition at date of issue.

¹⁾ Undated reference.

Publication IEC 61300-2-10	<u>Year</u> 1995	Title Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-10: Tests - Crush resistance	<u>EN/HD</u> EN 61300-2-10	<u>Year</u> 1997
IEC 61300-2-11	1995	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-11: Tests - Axial compression	EN 61300-2-11	1997
IEC 61300-2-12	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-12: Tests - Impact	EN 61300-2-12	2005 ²⁾
IEC 61300-2-17	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-17: Tests - Cold	EN 61300-2-17	2003 2)
IEC 61300-2-18	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-18: Tests - Dry heat - High temperature endurance	EN 61300-2-18	2005 ²⁾
IEC 61300-2-19	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-19: Tests - Damp heat (steady state)	EN 61300-2-19	2005 2)
IEC 61300-2-21	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-21: Tests - Composite temperature-humidity cyclic test	EN 61300-2-21	1997 ²⁾
IEC 61300-2-22	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-22: Tests - Change of temperature	EN 61300-2-22	2007 2)
IEC 61300-2-23	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-23: Tests - Sealing for non-pressurized closures of fibre optic devices	EN 61300-2-23	1997 ²⁾
IEC 61300-2-26	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-26: Tests - Salt mist	EN 61300-2-26	2007 2)
IEC 61300-2-27	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-27: Tests - Dust - Laminar flow	EN 61300-2-27	1997 ²⁾

Publication IEC 61300-2-28	Year _ 1)	Title Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-28: Tests - Industrial atmosphere (sulphur dioxide)	EN/HD EN 61300-2-28	<u>Year</u> 1997 ²⁾
IEC 61300-2-33	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-33: Tests - Assembly and disassembly of fibre optic closures	EN 61300-2-33	2007 2)
IEC 61300-2-34	-1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-34: Tests - Resistance to solvents and contaminating fluids	EN 61300-2-34	1997 ²⁾
IEC 61300-2-37	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-37: Tests - Cable bending for fibre optic closures	EN 61300-2-37	2007 2)
IEC 61300-2-38	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-38: Tests - Sealing for pressurized fibre optic closures	EN 61300-2-38	2006 ²⁾
IEC 61300-2-42	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-42: Tests - Static side load for connectors	EN 61300-2-42	2005 ²⁾
IEC 61300-2-44	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-44: Tests - Flexing of the strain relief of fibre optic devices	EN 61300-2-44	2005 ²⁾
IEC 61300-2-45	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-45: Tests - Durability test by water immersion	EN 61300-2-45	1999 ²⁾
IEC 61300-2-46	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-46: Tests - Damp heat cyclic	EN 61300-2-46	2006 2)
IEC 61300-2-48	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-48: Tests - Temperature-humidity cycling	EN 61300-2-48	2003 2)

Publication IEC 61300-2-49	<u>Year</u> – 1)	Title Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-49: Tests - Connector installation test	<u>EN/HD</u> EN 61300-2-49	<u>Year</u> 2007 ²⁾
IEC 61300-2-50	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-50: Tests - Fibre optic connector proof test with static load - Singlemode and multimode	EN 61300-2-50	2007 2)
IEC 61300-2-51	1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-51: Tests - Fibre optic connector test for transmission with applied tensile load - singlemode and multimode	EN 61300-2-51	2007 2)
IEC 61300-3-3	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-3: Examinations and measurements - Active monitoring of changes in attenuation and return loss	EN 61300-3-3	2003 2)
IEC 61300-3-4	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-4: Examinations and measurements - Attenuation	EN 61300-3-4	2001 2)
IEC 61300-3-6	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-6: Examinations and measurements - Return loss	EN 61300-3-6	2003 2)
IEC 61300-3-28	- ¹⁾	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-28: Examinations and measurements - Transient loss	EN 61300-3-28	2002 2)
IEC 61300-3-34	_ 1)	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-34: Examinations and measurements - Attenuation of random mated connectors	EN 61300-3-34	2002 2)
IEC Guide 109	_ 1)	Environmental aspects - Inclusion in electrotechnical product standards	-	-
ISO 1998	Series	Petroleum industry - Terminology	-	_

INTERNATIONAL STANDARD

IEC 61753-1

First edition 2007-03

Fibre optic interconnecting devices and passive components performance standard –

Part 1:

General and guidance for performance standards



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INTERNATIONAL STANDARD

IEC 61753-1

First edition 2007-03

Fibre optic interconnecting devices and passive components performance standard –

Part 1: General and guidance for performance standards

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PRICE CODE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS PERFORMANCE STANDARD –

Part 1: General and guidance for performance standards

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, Publicity 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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International Standard IEC 61753-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This first edition of IEC 61753-1 cancels and replaces Edition 1 of IEC 61753-1-1 published in 2000. It constitutes a technical revision.

Specific technical changes vis-à-vis IEC 61753-1-1:2000 include that this new edition covers all passive fibre optic products, including connectors, passive optical components, fibre management systems and closures.

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

FDIS	Report on voting
86B/2452/FDIS	86B/2498/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 61753 series, under the general title *Fibre optic interconnecting devices and passive components performance standards*, 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.

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INTRODUCTION

Performance standards define the requirements for standard optical performance under a set of specified conditions. Each standard contains a series or a set of tests and measurements with clearly stated conditions, severities and pass/fail criteria. The series of tests, commonly referred to as an operating service environment or performance category, is intended to be run on a 'one-off' basis to prove the product's ability to satisfy the requirements of a specific application, market sector or user group.

The subsequent parts of this document define those sets of tests which form each operating service environment or performance category and which have been standardised for international use. A product that has been shown to meet all the requirements of a performance standard may be declared as complying with that performance standard.

Products having the same classification from one manufacturer that satisfy a performance standard will operate within the boundaries set by the performance standard. Intermateability or interchangeability of products from different suppliers (having the same classification and conforming to the same performance standard) can only be guaranteed when these products are also meeting the interface standards. Only in this condition an equivalent level of performance will be provided when they are used together (for example, in the case of optical connectors).

Conformance to a performance standard is not a guarantee of lifetime assured performance or reliability. Reliability testing must be the subject of a separate test schedule, where the tests and severities selected are truly representative of the requirements of this reliability test programme. Consistency of manufacture should be maintained using a recognised Quality Assurance programme whilst the reliability of product should be evaluated using the procedures recommended in IEC 62005.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS PERFORMANCE STANDARD -

Part 1: General and guidance for performance standards

1 Scope

This part of IEC 61753 deals with performance standards for all passive fibre optic products, including connectors, passive optical components, fibre management systems and closures. The IEC 61753 series is published in multiple parts. This Part 1 covers general information on performance standards. It defines those tests and severities which form the performance categories or general operating service environments and identifies those tests which are considered to be product specific. Test and severity details are given in Annex A. Part 1 also includes references, definitions and rules for creating a performance standard, together with informative annexes, such as a description of test sequencing given in Annex B, and other pertinent information.

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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 60529. Degrees of protection provided by enclosures (IP Code)

IEC 60590, Determination of the aromatic hydrocarbon content of new mineral insulating oils

IEC 61300-2-1, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-1: Tests – Vibration (sinusoidal)

IEC 61300-2-2, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-2: Tests – Mating durability

IEC 61300-2-4, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-4: Tests – Fibre/cable retention

IEC 61300-2-5, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-5: Tests – Torsion/Twist

IEC 61300-2-6, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-6: Tests – Tensile strength of coupling mechanism

IEC 61300-2-7:1995, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-7: Tests – Bending moment

- IEC 61300-2-9, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-9: Tests Shock
- IEC 61300-2-10:1995, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-10: Tests Crush resistance
- IEC 61300-2-11:1995, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-11: Tests Axial compression
- IEC 61300-2-12, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-12: Tests Impact
- IEC 61300-2-17, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-17: Tests Cold
- IEC 61300-2-18, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-18: Tests Dry heat High temperature endurance
- IEC 61300-2-19, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-19: Tests Damp heat (steady state)
- IEC 61300-2-21, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-21: Tests Composite temperature-humidity cyclic test
- IEC 61300-2-22, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-22: Tests Change of temperature
- IEC 61300-2-23, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-23: Tests Sealing for non-pressurized closures of fibre optic devices
- IEC 61300-2-26, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-26: Tests Salt mist
- IEC 61300-2-27, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-27: Tests Dust Laminar flow
- IEC 61300-2-28, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-28: Tests Industrial atmosphere (sulphur dioxide)
- IEC 61300-2-33, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-33: Tests Assembly and disassembly of closures
- IEC 61300-2-34, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-34: Tests Resistance to solvents and contamining fluids
- IEC 61300-2-37, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-37: Tests Cable bending for closures
- IEC 61300-2-38, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-38: Tests Sealing for pressurized closures of fibre optic devices
- IEC 61300-2-42, Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-42: Tests Static side load for connectors

IEC 61300-2-44, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-44: Tests – Flexing of the strain relief of fibre optic devices

IEC 61300-2-45, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-45: Tests – Durability test by water immersion

IEC 61300-2-46, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-46: Tests – Damp heat cyclic

IEC 61300-2-48, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-48: Tests – Temperature-humidity cycling

IEC 61300-2-49, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-49: Tests – Connector Installation test ¹

IEC 61300-2-50, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-50: Tests – Fibre optic connector proof test – singlemode and multimode 2

IEC 61300-2-51 Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-51: Tests – Fibre optic connector test for transmission with applied tensile load – singlemode and multimode ³

IEC 61300-3-3 Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-3: Examinations and measurements – Active monitoring of changes in attenuation and return loss

IEC 61300-3-4 Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Examinations and measurements – Attenuation

IEC 61300-3-6 Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-6: Examinations and measurements – Return loss

IEC 61300-3-28 Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-28: Examinations and measurements – Transient loss

IEC 61300-3-34 Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-34: Examinations and measurements – Attenuation of random mated connectors

IEC Guide 109, Environmental aspects – Inclusion in electrotechnical product standards

ISO 1998 (all parts), Petroleum industry – Terminology

3 Terms and definitions

For the purposes of this document the following definitions apply.

NOTE Definitions for various components can be found in the relevant IEC standard or generic specification.

¹ To be published.

² To be published.

³ To be published.