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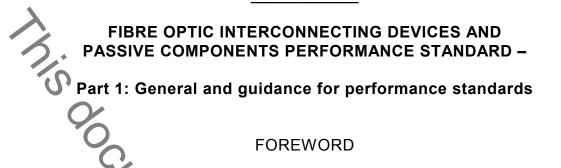


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International Standard IEC 61753-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This first edition of IEC 61753-1 cancels and replaces Edition 1 of IEC 61753-11 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

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	86E
<b>•</b> ••••	

86B/2452/FDIS	86B/2498/RVD

Report on voting

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- withdrawn,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.
- amended.

A bilingual version of this publication may be issued at a later date.



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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.

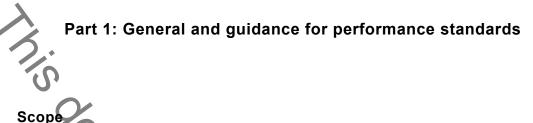
The subsequent parts of this document define those sets of tests which form each operating service environment or performance category and which have been standardised for international use. A product that has been shown to meet all the requirements of a performance standard may be declared as complying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

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## FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS PERFORMANCE STANDARD –



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.

## 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 <sup>1</sup>

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 <sup>2</sup>

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 <sup>3</sup>

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

<sup>&</sup>lt;sup>1</sup> To be published.

<sup>&</sup>lt;sup>2</sup> To be published.

<sup>&</sup>lt;sup>3</sup> To be published.