

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Performance standard –

Part 021-06: Single-mode fibre optic connectors terminated as pigtails and patchcords for category OP+ – Extended outdoor protected environment

Dispositifs d'interconnexion et composants passifs fibroniques – Norme de performance –

Partie 021-06: Connecteurs à fibres optiques unimodales raccordés comme des fibres amorces ou des cordons de brassage pour la catégorie OP+ – Environnement extérieur protégé étendu



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES AND
PASSIVE COMPONENTS – PERFORMANCE STANDARD –****Part 021-06: Single-mode fibre optic connectors terminated
as pigtails and patchcords for category OP+ –
Extended outdoor protected environment**

FOREWORD

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IEC 61753-021-06 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics. It is an International Standard.

This first edition cancels and replaces the first edition of IEC 61753-021-6 published in 2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61753-021-6:2007:

- a) updated environmental category (from O to OP+), tests and their severities according to IEC 61753-1:2018;
- b) removed the copyright notice as it is no longer needed;
- c) changed title and scope to remove restrictions on attenuation and return loss grades;
- d) changed the term and definitions of the different types of test samples (pigtail test samples and patchcord test samples) used in the various tests to avoid confusion;
- e) removed the term and definition for small form factor (SFF) connectors as it is no longer used in the document;
- f) updated fibre naming conventions according to IEC 60793-2-50: and added provisions for B-657 fibres;
- g) added all the attenuation and return loss grades defined in IEC 61753-1;
- h) removed the static side load test;
- i) removed the need to perform all tests sequentially to align with cable performance standards;
- j) added provisions for rectangular ferrule connectors;
- k) added Annex B for visual examination of the outer cable sheath, movement of reinforced cables as an additional requirement for change of temperature, cable retention and flexing of the strain relief tests.

The text of this International Standard is based on the following documents:

Draft	Report on voting
86B/4792/FDIS	86B/4813/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts of the IEC 61753 series, published under the general title *Fibre optic interconnecting devices and passive components – Performance standard*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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 standardized 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. Inter-mateability 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 also meet the interface standards. Only in this condition will an equivalent level of performance 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 measured performance or reliability.

Reliability testing is subjected to 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 recognized quality assurance programme whilst the reliability of the product should be evaluated using the procedures recommended in the IEC 62005 series.

Tests and measurements should be selected from the IEC 61300 series. Where this is not possible, the required test method should be attached as an annex to the performance standard.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 021-06: Single-mode fibre optic connectors terminated as pigtails and patchcords for category OP+ – Extended outdoor protected environment

1 Scope

This part of IEC 61753 defines the minimum initial test and measurement requirements and severities which single-mode fibre optic connectors terminated as a pigtail or a patchcord satisfy in order to be categorised as meeting the IEC standard category OP+ (extended outdoor protected environment), as defined in IEC 61753-1.

If tests were performed on the connectors terminated as pigtails or patchcords for category OP+^{HD} and the product passed, the product will be automatically qualified or categorized as meeting the IEC standard for category OP+. If tests are performed on the connectors terminated as pigtails or patchcords for category OP+, and the product passes, the product will be automatically qualified or categorized as meeting the IEC standard for categories OP and C.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60793-2-50, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-2-50, *Optical fibre cables – Part 2-50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies*

IEC 61300-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

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 or cable retention*

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

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*