

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Fibre optic interconnecting devices and passive components – Performance standard –**

**Part 021-02: Single-mode fibre optic connectors terminated as pigtails and patchcords for category C – Controlled environment**

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

**Partie 021-02: Connecteurs à fibres optiques unimodales raccordés comme des fibres amorce ou des cordons de brassage pour la catégorie C – Environnement contrôlé**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES  
AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –****Part 021-02: Single-mode fibre optic connectors terminated as pigtails  
and patchcords for category C – Controlled environment**

## FOREWORD

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IEC 61753-021-02 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 second edition of IEC 61753-021-2 published in 2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61753-021-2:2007:

- a) changed scope to remove restrictions on attenuation and return loss grades;
- b) included provisions for rectangular ferrule connectors;

- c) changed the terms and definitions of the different types of test samples (pigtail test samples and patchcord test samples) used in the various tests to avoid confusion;
- d) updated fibre naming conventions according to IEC 60793-2-50 and added provisions for B-657 fibres;
- e) added all the attenuation and return loss grades defined in IEC 61753-1;
- f) test severities updated according to IEC 61753-1;
- g) reduced flexing of strain relief cycles from 100 cycles to 50 cycles;
- h) added the torsion test;
- i) reduced the duration of the fibre/cable retention test on reinforced cables from 120 s to 60 s minimum;
- j) removed the static side load test;
- k) reduced the number of mating durability cycles from 500 cycles to 200 cycles and added provisions for rectangular ferrule connectors;
- l) 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/4793/FDIS | 86B/4812/Rev. 0  |

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\\_references](http://www.iec.ch/members_experts_references). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://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](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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

### **Part 021-02: Single-mode fibre optic connectors terminated as pigtails and patchcords for category C – Controlled 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 categorized as meeting the IEC standard category C (controlled environment), as defined in IEC 61753-1.

If tests were performed on the connectors terminated as pigtails or patchcords for categories OP+<sup>HD</sup>, OP+, OP, OP<sup>HD</sup>, or C<sup>HD</sup> and the product passed, the product will be automatically qualified or categorized as meeting the IEC standard for category 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*

IEC 61300-2-12, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-12: Tests – Impact*