SLOVENSKI STANDARD
oSIST prEN IEC 61753-021-03:2025

01-maj-2025

Optični spojni elementi in pasivne komponente - Tehnični standard - 021-03. del: Konektorji za enorodovna optična vlakna, zaključeni kot repki ali povezovalne vrvice za kategorijo OP - Zunanje zaščiteno okolje

Fibre optic interconnecting devices and passive components - Performance standard - Part 021-03: Single-mode fibre optic connectors terminated as pigtails and patchcords for category OP - Outdoor protected environment

Dispositifs d'interconnexion et composants passifs fibroniques - Norme de performance - Partie 021-03: Connecteurs à fibres optiques unimodales raccordés à des fibres amorces et des cordons de brassage pour la catégorie OP - Environnement extérieur protégé

Ta slovenski standard je istoveten z: **prEN IEC 61753-021-03:2025**

ICS:

33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices

oSIST prEN IEC 61753-021-03:2025 **en**

86B/5006/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 61753-021-03 ED1	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2025-03-21	**2025-06-13**
SUPERSEDES DOCUMENTS:	
86B/4946/CD, 86B/4958A/CC	

IEC SC 86B : FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS	
SECRETARIAT:	SECRETARY:
Japan	Mr Ryo Koyama
OF INTEREST TO THE FOLLOWING COMMITTEES:	HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED:	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any relevant "In Some Countries" clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Fibre optic interconnecting devices and passive components - Performance standard - Part 021-03: Single-mode fibre optic connectors terminated as pigtails and patchcords for category OP – Outdoor protected environment

PROPOSED STABILITY DATE: 2033

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD

Part 021-03: Single-mode fibre optic connectors terminated as pigtails and patchcords for category OP – Outdoor protected environment

FOREWORD

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IEC 61753-021-03 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 61753-021-3 published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61753-021-3:2012:

a) updated environmental category (from U to OP), tests and their severities according to IEC 61753-1;
b) changed the term and definitions of the different type of test samples (pigtail test samples and patchcord test samples) used in the various tests to avoid confusion;
c) updated fibre naming conventions according to IEC 60793-2-50 and added provision for B-657 fibres;

d) added all the attenuation and return loss grades defined in IEC 61753-1;

e) removed the static side load test;

f) add provisions for rectangular ferrule connectors;

g) added the fibre optic connector proof test with static load – side pull;

h) 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
XX/XX/FDIS	XX/XX/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,
- replaced by a revised edition, or
- amended.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 021-03: Single-mode fibre optic connectors terminated as pigtails and patchcords for category OP – Outdoor protected environment

1 Scope

This part of IEC 61753 defines 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 OP (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}, OP+ or $OP+^{HD}$ 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 category C or C^{HD}.

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 60794-2-23, *Optical fibre cables – Part 2-23: Indoor cables – Detailed specification for multi-fibre cables for use in MPO connector terminated cable assemblies*

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

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*

IEC 61300-2-22, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-22: Tests – Change of temperature*

IEC 61300-2-26, *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 61300-2-44, *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 61300-2-46, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-46: Tests – Damp heat, cyclic*

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 with static load – Singlemode and multimode*

IEC 61300-3-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

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 61300-3-45, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-45: Examinations and measurements – Attenuation of random mated multi-fibre connectors*

IEC 61753-1, *Fibre optic interconnecting devices and passive components – Performance standard – Part 1: General and guidance*

IEC 61754 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces*

IEC 61755 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector optical interfaces*

IEC 61755-2 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector optical interfaces – Part 2: Optical interface*

IEC 61755-3 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector optical interfaces – Part 3: Optical interface*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61753-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
change in attenuation
δ
± deviation from the original value of the transmitted power at the start of the test

Note 1 to entry: The deviation is expressed as a unit of dB.

3.2
sample
complete set of connector components required to provide demountable coupling between one or more pairs of optical fibres

3.3
pigtail test sample
sample comprised of two pigtails mated with an adaptor

Note 1 to entry: See Figure 1.

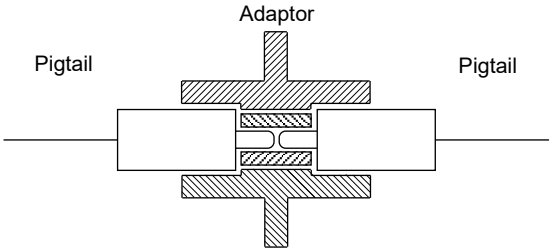

Figure 1 – Pigtail test sample

3.4
patchcord test sample
sample comprised of patchcord mated to two pigtails using adaptors

Note 1 to entry: See Figure 2.

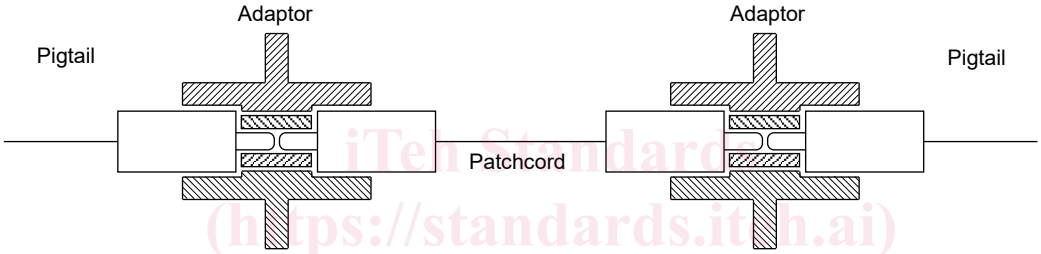

Figure 2 – Patchcord test sample

4 Tests

All test and measurement methods were selected from the IEC 61300 series and the test parameters and requirements from IEC 61753-1 as defined in 7.6 and 7.7. Additional requirements to certain tests are given in Annex B.

The connector plugs under test shall be terminated onto single-mode fibre per IEC 60793-2-50, type B-652 or B-657, in either primary coated, buffered or reinforced cable format. The reinforced cable used for the pigtails or patchcords shall conform to the requirements of IEC 60794-2-23 or IEC 60794-2-50. Care shall be taken to respect the minimum bend radius of the cable. The connector interface standard shall meet the dimensions of the relevant part of the IEC 61754 series and the connector optical interface standard shall meet the relevant requirements of the IEC 61755 series.

5 Test report

Fully documented test reports and supporting evidence shall be prepared and available for inspection as evidence that the tests have been carried out and the results are satisfactory.

6 Reference components

No reference components are required to perform the tests in this document.