SLOVENSKI STANDARD
oSIST prEN IEC 61753-022-13:2024

01-september-2024

Optični spojni elementi in pasivne komponente - Tehnični standard - 022-13. del: Konektorji za večmodna optična vlakna, kot repki ali povezovalne vrvice za kategorijo OP+ HD - Razširjeno zunanje zaščiteno okolje z dodatnim odvajanjem toplote

Fibre optic interconnecting devices and passive components - Performance standard - Part 022-13: Multimode fibre optic connectors terminated as pigtails and patchcords for category OP+ HD- Extended outdoor protected environment with additional heat dissipation

Dispositifs d'interconnexion et composants passifs fibroniques - Norme de performance - Partie 022-13: Connecteurs à fibres optiques multimodales raccordés comme des fibres amorces et des cordons de brassage pour la catégorie OP+HD - Environnement extérieur protégé étendu avec dissipation de chaleur supplémentaire

Ta slovenski standard je istoveten z: prEN IEC 61753-022-13:2024

ICS:

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COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 61753-022-13 ED1**	
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IEC SC 86B : FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS

SECRETARIAT: Japan	SECRETARY: Mr Shigeru Tomita
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY

☒ 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.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Fibre optic interconnecting devices and passive components - Performance standard - Part 022-13: Multimode fibre optic connectors terminated as pigtails and patchcords for category OP+^{HD}- Extended outdoor protected environment with additional heat dissipation

PROPOSED STABILITY DATE: 2029

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 022-13: Multimode fibre optic connectors terminated as pigtails and patchcords for category OP+ HD- Extended outdoor protected environment with additional heat dissipation

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International Standard IEC 61753-022-13 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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.

The National Committees are requested to note that for this document the stability date is 20XX..

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS –PERFORMANCE STANDARD –

Part 022-13: Multimode fibre optic connectors terminated as pigtails and patchcords for category OP+ HD- Extended outdoor protected environment with additional heat dissipation

1 Scope

This part of IEC 61753 contains the minimum requirements and severities which multimode fibre optic connectors terminated as a pigtail and a patchcord need to meet in order to be categorized as meeting the IEC standard category OP+HD (Extended outdoor protected environment with additional heat dissipation), as defined in IEC 61753-1, If tests are performed on the connectors terminated as pigtails or patchcords for category OP+HD, and the product passes, the product will be automatically qualified or categorized as meeting the IEC standard for categories OP+, OP, OPHD, C and CH.

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 60793-2-10, *Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres*

IEC 607*94-2-50, Optical fibre cables - Part 2-50: Indoor cables - Family specification for simplex and duplex cables for use in terminated cable assemblies*

IEC 60874-14-1, *Connectors for optical fibres and cables - Part 14-1: Detail specification for fibre optic connector type SC/PC standard terminated to multimode fibre type A1a, A1b*

IEC 60874-19-1, *Fibre optic interconnecting devices and passive components - Connectors for optical fibres and cables - Part 19-1: Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b - Detail specification*

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 61300-2-21, *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 61300-2-26, *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 61300-2-50, *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 in 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 61300-3-35, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and fibre-stub transceivers*

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 61754 (all parts), *Fibre optic connector interfaces*

IEC 63267-2 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector optical interfaces- Part 2: Multimode Optical Interface*

IEC 63267-3 (all parts), *Fibre optic interconnecting devices and passive components - Fibre optic connector optical interfaces - Part 3: End face geometry*

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 terminological databases for use in standardization at the following addresses:

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

3.1

change in attenuation

± deviation from the original value of the transmitted power at the start of the test

3.2

pigtail test sample

two pigtails mated with an adaptor

Note 1 to entry: See Figure 1.

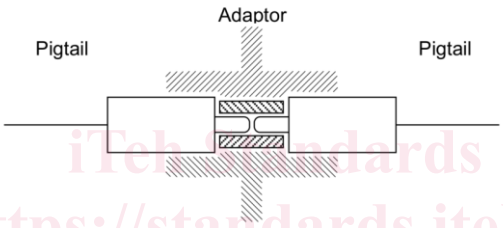

Figure 1 – Pigtail test sample

3.3

patchcord test sample

patchcord mated to two pigtails using adaptors

Note 1 to entry: See Figure 2

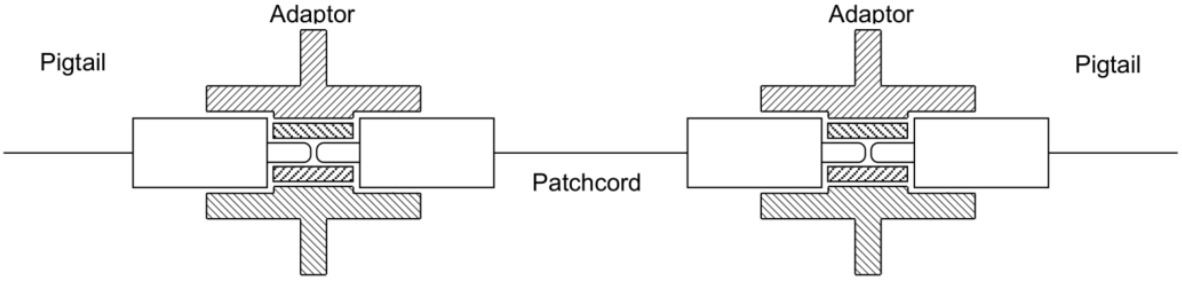

Figure 2 – Patchcord test sample

4 Test

All test and measurement methods have been selected from the IEC 61300 series and the test parameters and requirements from IEC 61753-1 as defined in 6.6 and 6.7, Additional requirements to certain tests are given in Annex B.

The connector plugs under test shall be terminated onto multimode fibre as per IEC 60793-2-10, fibre type A1-OM1, A1-OM2, A1-OM3, A1-OM4 or A1-OM5, in either buffered or reinforced cable format. The reinforced cable used for the pigtails or patchcords shall conform to the requirements of IEC 60794-2-50. Care shall be taken to respect the minimum bend radius of the cable.

All optical testing shall be carried out at one central wavelength only, this shall be 850 nm ± 30 nm.

Source and detector characteristics shall be compliant with IEC 61300-3-4.

Launch conditions shall be in accordance with IEC 61300-1.

The full set of tests shall be carried out for all fibre types for which compliance to this standard is claimed.

5 Test report

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

6 Performance requirements

6.1 General

Unless otherwise specified, all tests shall be carried out at standard atmospheric conditions as specified on IEC 61300-1.

6.2 Dimensions

Dimensions shall comply with the appropriate IEC interface standard as defined in the IEC 61754 series.

6.3 Sample size

For the purposes of this document, a sample is composed of pigtail test sample or patchcord test sample (see Clause 3). The sample sizes to be used for the tests shall be as defined in Annex A. There is no defined sequence or grouping in which the tests shall be run, but rather, individually on new samples. Samples for the first test (attenuation) are to be randomly selected and randomly mated new products. Samples for the second test (return loss) are the same plugs selected and mated for the first test. Samples from the previous tests may be used if desired. If a failure occurs on a sample that was tested in a previous test, a new set of samples shall be prepared, the failed test shall be re-done, and the test can only be repeated one time.

6.4 Endface geometry

The connector endface shall comply with the endface geometry requirements of the applicable IEC optical interface standard IEC 63267-3. Recommended values can be found in IEC 60874-14-1 and IEC 60874-19-1 for cylindrical ferrule connectors or IEC PAS 63267-3-31 for rectangular ferrule connectors. Compliance to the appropriate optical interface standard shall be confirmed on all samples before the start of testing and after all of the tests have been completed. Non-compliance with the endface geometry requirements of the applicable optical interface standard on any connector tested results in a failure of this performance standard.

NOTE IEC 63267-3 is currently under consideration.

6.5 Visual examination

A visual examination shall be carried out on all samples before and after each of the mechanical and climatic tests (see Table 2). The outer cable sheath of the assemblies with reinforced cable shall be marked at the end of the connector boot during the initial visual examination (see **Error! Reference source not found.**B).