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INTERNATIONAL STANDARD

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 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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IEC 61753-022-13 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.

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

Draft	Report on voting
86B/5174/FDIS	86B/5208/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 in 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– withdrawn, or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.

1 Scope

This part of IEC 61753 defines the minimum initial test and measurement requirements, and severities which multimode fibre optic connectors terminated as a pigtail or a patchcord satisfy 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 pass, the product will be automatically qualified or categorized as meeting the IEC standard for categories OP+, OP, OP^{HD}, C and 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 60793-2-10, *Optical fibres - Part 2-10: Product specifications - Sectional specification for category A1 multimode 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 61300-2-2:2009, *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 61300-2-12:2009, *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 and components*

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 61300-3-6:2008, *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 61300-3-34:2009, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-34: Examinations and measurements - Attenuation of random mated connectors*

IEC 61300-3-45:2023, *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 63267-2 (all parts), *Fibre optic interconnecting devices and passive components - Connector optical interfaces for enhanced macro bend multimode fibres - Part 2: Connection parameters of physically contacting 50 µm core diameter fibres*

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:

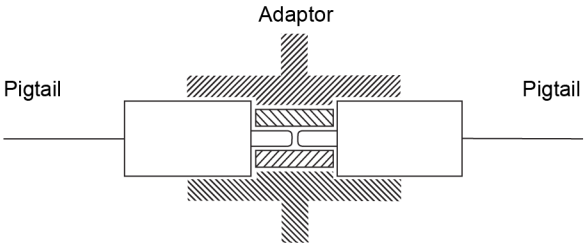
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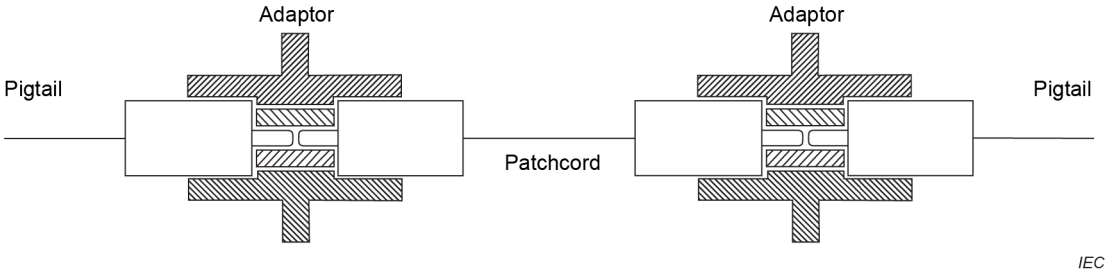
3.1
change in attenuation
δ
positive or negative deviation from the original value of the transmitted power at the start of the test

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

3.2
pigtail test sample
sample comprised of two pigtails mated with an adaptor



3.3
patchcord test sample
sample comprised of patchcord mated to two pigtails using adaptors



4 Tests

All test and measurement methods have been selected from the IEC 61300 series. The performance criteria and the test details and requirements from IEC 61753-1 are defined in 6.6 and 6.7. Reference shall be made to Annex B for additional requirements.

The connector plugs under test shall be terminated onto multimode fibre as per IEC 60793-2-10, fibre type A1-OM2, A1-OM3, A1-OM4 or A1-OM5, in either primary coated fibre, buffered or reinforced cable format. The full set of tests shall be carried out for at least one fibre type. Other fibre types are qualified by similarity. The reinforced cable used for pigtails or patchcords shall conform to the requirements of IEC 60794-2-23 or IEC 60794-2-50 except for the requirement on the temperature cycling: the temperature range shall be –40 °C to +85 °C. The minimum bend radius of the cable shall be complied with.