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- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



86B/5035/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:
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DATE OF CIRCULATION:
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CLOSING DATE FOR COMMENTS:
2025-05-09

SUPERSEDES DOCUMENTS:
86B/4855/NP, 86B/4895A/RVN

IEC SC 86B : FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS

SECRETARIAT:
Japan

SECRETARY:
Mr Ryo Koyama

OF INTEREST TO THE FOLLOWING COMMITTEES:

HORIZONTAL FUNCTION(S):

ASPECTS CONCERNED:

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TITLE:

Fibre optic interconnecting devices and passive components - Performance standard - Part 021-07: Hardened fibre optic connectors terminated on singlemode fibre for category A - Outdoor aerial environment

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS
– PERFORMANCE STANDARD –****Part 022-07: Hardened fibre optic connectors terminated on single-mode
fibre for category A – Outdoor aerial environment**

FOREWORD

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International Standard IEC 61753-021-07 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.

87 The committee has decided that the contents of this document will remain unchanged until the
88 stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to
89 the specific document. At this date, the document will be

- 90 • reconfirmed,
91 • withdrawn,
92 • replaced by a revised edition, or
93 • amended.

94

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

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

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 021-07: Hardened fibre optic connectors terminated on single-mode fibre for category A – Outdoor aerial environment

1 Scope

This part of IEC 61753 contains the minimum requirements and severities, which a hardened fibre optic connector with single-fibre ferrule or multi-fibre ferrule terminated on single-mode fibre satisfy in order to be categorized as meeting the IEC standard category A – Outdoor aerial environment, as defined in Annex A of IEC 61753-1.

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 60529, *Degrees of protection provided by enclosures (IP Code)*

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 61300-2-9, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-9: Tests – Shock*

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

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 61300-2-33, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-33: Tests – Assembly and disassembly of fibre optic mechanical splices, fibre management systems and closures*

IEC 61300-2-34, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-34: Tests – Resistance to solvents and contaminating fluids of interconnecting components and closures*

- 142 IEC 61300-2-37, *Fibre optic interconnecting devices and passive components – Basic test and*
 143 *measurement procedures – Part 2-37: Tests – Cable bending for fibre optic closures*
- 144 IEC 61300-2-38, *Fibre optic interconnecting devices and passive components – Basic test and*
 145 *measurement procedures – Part 2-38: Tests – Sealing for pressurized fibre optic closures*
- 146 IEC 61300-2-50, *Fibre optic interconnecting devices and passive components – Basic test and*
 147 *measurement procedures – Part 2-50: Tests – Fibre optic connector proof test with static load*
 148 *– Singlemode and multimode*
- 149 IEC 61300-3-1, *Fibre optic interconnecting devices and passive components – Basic test and*
 150 *measurement procedures – Part 3-1: Examinations and measurements – Visual examination*
- 151 IEC 61300-3-3, *Fibre optic interconnecting devices and passive components – Basic test and*
 152 *measurement procedures – Part 3-3: Examinations and measurements – Active monitoring of*
 153 *changes in attenuation and in return loss*
- 154 IEC 61300-3-4:2012, *Fibre optic interconnecting devices and passive components – Basic test*
 155 *and measurement procedures – Part 3-4: Examinations and measurements – Attenuation*
- 156 IEC 61300-3-6, *Fibre optic interconnecting devices and passive components – Basic test and*
 157 *measurement procedures – Part 3-6: Examinations and measurements – Return loss*
- 158 IEC 61300-3-28, *Fibre optic interconnecting devices and passive components – Basic test and*
 159 *measurement procedures – Part 3-28: Examinations and measurements – Transient loss*
- 160 IEC 61300-3-34, *Fibre optic interconnecting devices and passive components – Basic test and*
 161 *measurement procedures – Part 3-34: Examinations and measurements – Attenuation of*
 162 *random mated connectors*
- 163 IEC 61300-3-45, *Fibre optic interconnecting devices and passive components – Basic test and*
 164 *measurement procedures – Part 3-45: Examinations and measurements – Attenuation of*
 165 *random mated multi-fibre connectors*
- 166 IEC 61753-1:202X, *Fibre optic interconnecting devices and passive components – Performance*
 167 *standard – Part 1-1: General and guidance*
- 168 IEC PAS 61300-2-XX, *Fibre optic interconnecting devices and passive components – Basic*
 169 *test and measurement procedures – Part 2-XX: Tensile strength of coupling mechanism and*
 170 *cable fixing for hardened connectors (in development)*
- 171 IEC 61754 (all parts), *Fibre optic connector interfaces*

172 **3 definitions and abbreviations**

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

175 ISO and IEC maintain terminological databases for use in standardization at the following
 176 addresses:

- 177 • IEC Electropedia: available at <http://www.electropedia.org/>
- 178 • ISO Online browsing platform: available at <http://www.iso.org/obp>

179 **3.1 change in attenuation**

180 δ

181 +/- deviation from the original value of the transmitted power at the start of the test

182 **3.2 sample**

183 complete set of connector components required to provide demountable coupling between one
 184 or more pairs of optical fibre

3.3 hardened fibre optic connector

HFOC

water and dust tight connector with three types: plug connector, adaptor connector and socket connector, which could be mated as: plug-socket, or plug-adaptor-plug

Note 1 to entry: A hardened fibre optic connector is typically used as connection in outside plant.

Note 2 to entry: For more convenience reading, plug connector will represent the meaning of hardened fibre optic plug connector, and socket or adaptor connector will represent the meaning of hardened fiber optic socket or adaptor connector in the following content.

3.4 hardened connector pigtail test assembly

a hardened fibre optic plug connector mated with a hardened fibre optic socket connector with unterminated leads, or two hardened fibre optic plug connectors mated with a hardened fibre optic adaptor connector with unterminated leads

Note 1 to entry: As shown in Figure 1, each of the unterminated leads should be at least 5 m long so that the fibre ends connected to the measurement equipment (e.g., by splices) can be located outside of the environmental test chamber.

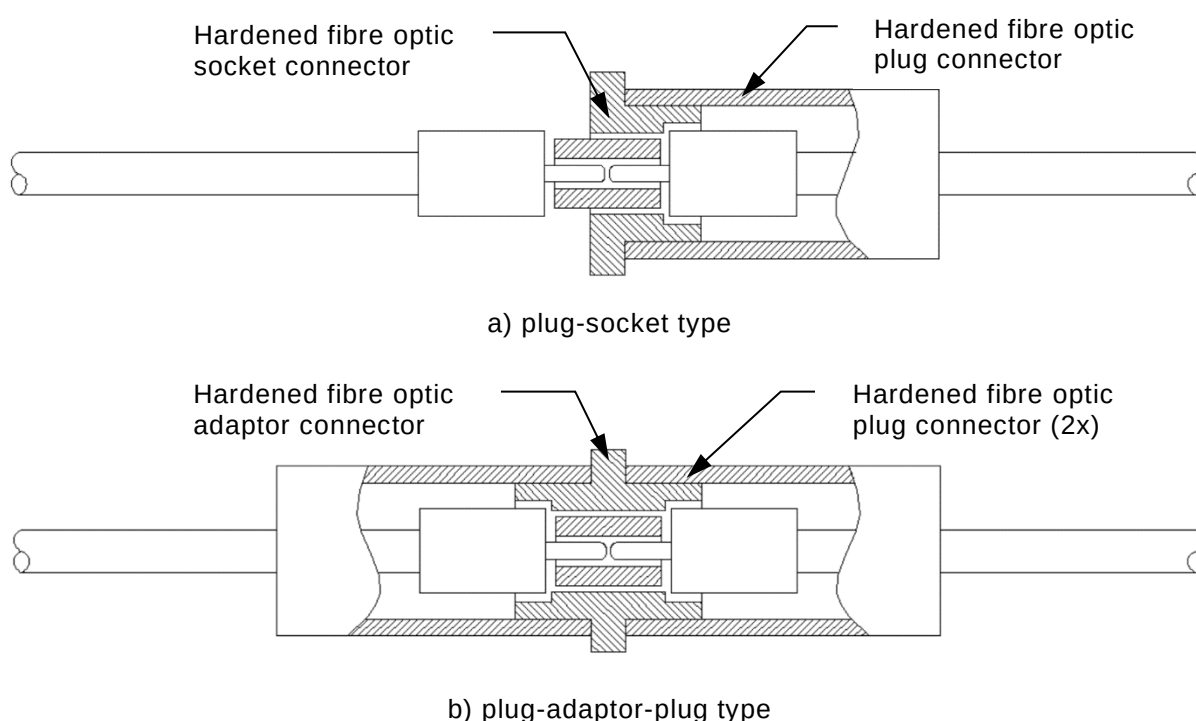


Figure 1 – Hardened connector pigtail test assembly

4 General requirements

For all applied materials, a Material Safety Data Sheet shall be made available upon request.

The materials of the HFOC shall be compatible with other materials or solvents that can come into contact with it, for example cable filling compounds and degreasing agents.

All materials that can come in contact with personnel shall meet appropriate health and safety regulations.

For free breathing hardened connector, the material shall meet the requirements in Table A.14 of IEC 61753-1:202X, and all test items as required shall be performed after conditioning of the test samples to standard atmospheric conditions for at least 24 h.

For sealed hardened connector, the material shall meet the requirements in Table A.15 of IEC 61753-1:202X, and all test items as required shall be performed after conditioning of the test samples to standard atmospheric conditions for at least 24 h.