



SLOVENSKI STANDARD
SIST EN IEC 61300-1:2022/oprA1:2023
01-september-2023

Optični spojni elementi in pasivne komponente - Osnovni preskusni in merilni postopki - 1. del: Splošno in smernice - Dopolnilo A1

Amendment 1 - Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 1: General and guidance

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Messverfahren - Teil 1: Allgemeines und Leitfaden

Amendement 1 - Dispositifs d'interconnexion et composants passifs fibroniques - Procédures fondamentales d'essais et de mesures - Partie 1: Généralités et recommandations

Ta slovenski standard je istoveten z: EN IEC 61300-1:2022/prA1:2023

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86B/4760/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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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: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING <input type="checkbox"/> 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.	

Annex A This document is still under study and subject to change. It should not be used for reference purposes.
 Annex B 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.
 Annex C 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:
Amendment 1 - Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 1: General and guidance

PROPOSED STABILITY DATE: 2029

NOTE FROM TC/SC OFFICERS:

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING

DEVICES AND PASSIVE COMPONENTS -

BASIC TEST AND MEASUREMENT PROCEDURES

Part 1: General and guidance

AMENDMENT 1

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51 *Add the following new paragraph:*

52 **4.2.3 Requirements to test sample configuration in environmental test chamber**

53 Annex C defines example configuration of the test sample and specifies the fibre, pigtail or
54 cable length inside the environmental test chamber for different test sample types.

55

56 *Add the following new Annex C*

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Annex C (normative)

Test sample configuration in environmental test chamber

C.1 General

This annex defines the configurations of the test samples and the fibre, pigtail or cable lengths inside the environmental test chamber for the different test sample types, such as:

- Pigtail;
- Hardened connector pigtail;
- Patchcord;
- Non-connectorised passive component;
- Connectorised passive component;
- Plug-receptacle style passive component;
- Fibre management system;
- Protective housing without looped cable;
- Protective housing with looped cable;
- Combined protective housing test sample with looped cable;
- Mechanical splice or fusion splice.

An environmental test chamber is used for temperature cycling, dry heat, cold, damp heat and similar tests.

The test sample configuration and the fibre, pigtail or cable lengths inside the environmental test chamber shall be as given in clauses C.2 to C.12, unless otherwise specified in the relevant IEC 61753 performance standards and IEC 62005 reliability documents.

The method of storage shall not affect the optical fibre with respect to expansion or contraction. Tight coiling on a rigid cable reel shall not be used. The overlength of the fibres, pigtails or cables of the sample inside the chamber shall be routed in large diameter loose coils or bends. The diameter of the coils or bends shall be larger than the minimum bending diameter specified for the cable in service. The fibre, pigtail or cable coils shall be loosely fixed in a way that the cable elements are not under stress and are free to move.

The test sample or the additional pigtails should have unterminated leads of sufficient length to allow termination (splicing, connecting, etc.) to the optical monitoring equipment located outside of the environmental test chamber. The deployment of the fibre, pigtail or cable outside the chamber shall not affect the results.

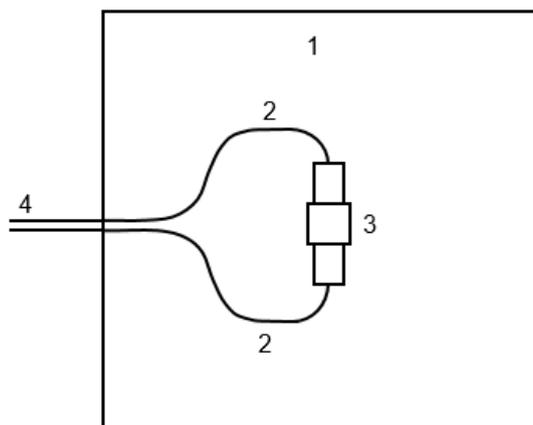
The configurations are shown with one incoming and one outgoing fibre, pigtail or cable of a test sample in Figure C.1 to Figure C.12 for easy illustration. Different types of test samples exist having one or more incoming and one or more outgoing fibres, pigtails or cables or even an incoming fibre, pigtail or cable only. The test sample configurations and length specifications for such test samples shall be applied analogously.

When several test samples are tested in the same chamber, the test samples shall be placed in such a way that they do not influence each other and do not exert any load on other test samples. Options are to place the test samples side by side or on different height levels. Care should be taken to ensure that the specified temperature and/or humidity is present at all samples. The test sample configuration and length specification for multiple test samples shall be applied analogously.

101 NOTE When using one of the protective housing test sample configurations in C.9 to C.11, experience shows that
 102 the test samples are only capable to pass the change of temperature requirements of the IEC 61753 series in this
 103 configuration when the cables are suitable for the specified operating temperature range. This means that the fibre
 104 protrusion after temperature changes is 20 mm or less at the terminated cable ends in the housings.

105 C.2 Pigtail test sample

106 The pigtail test sample should be placed inside the environmental test chamber as shown in
 107 Figure C.1. This configuration should be used for connectors terminated on pigtails and is
 108 intended for non-hardened connectors. For hardened connectors see C.3.



109

110 Key

111 1 environmental test chamber

112 2 pigtail

113 3 adaptor, if required

114 4 incoming and outgoing pigtails whose fibres are connected to the measurement equipment

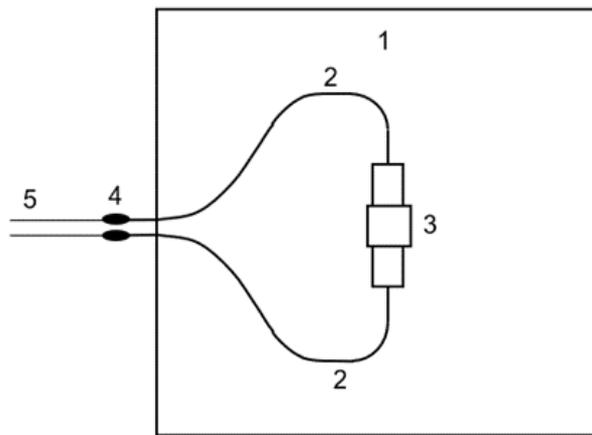
115

Figure C.1 - Example configuration of a pigtail test sample

116 Each pigtail should be at least 3 m in length and a length of at least 1,5 m shall be located
 117 inside the environmental test chamber. The end of the sheath and strength members of the
 118 reinforced cable may be outside or inside the environmental test chamber. An adaptor is
 119 required if a connector plug-adaptor-plug type is used. If a connector plug-socket type is used,
 120 no adaptor is required.

121 C.3 Hardened connector pigtail test sample

122 The hardened connector pigtail test sample should be placed inside the environmental test
 123 chamber as shown in Figure C.2. This configuration should be used for hardened connectors
 124 terminated on cables.



125

126 **Key**

127 1 environmental test chamber

128 2 hardened connector pigtail

129 3 adaptor, if required

130 4 all cable elements fixed of each pigtail

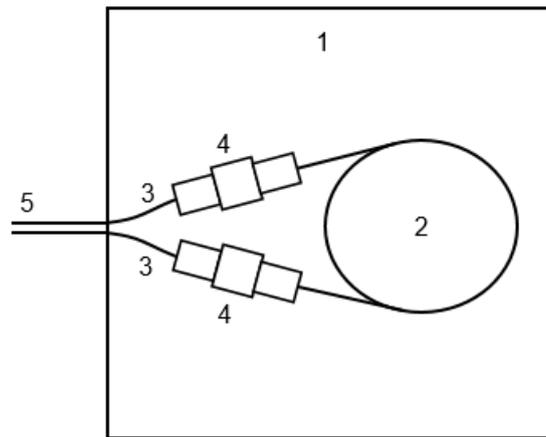
131 5 buffered format, if present, or otherwise the primary coated fibres with fibre ends connected to measurement
132 equipment133 **Figure C.2 - Example configuration of a hardened connector pigtail test sample**

134 Each hardened connector pigtail shall be a length of at least 5 m inside the environmental test
135 chamber. Just outside the environmental test chamber, all cable elements shall be fixed by
136 clamps, glue or other effective means. If present, the buffered fibres, or otherwise the primary
137 coated fibres should be routed outside the environmental test chamber where the fibre ends
138 are connected to the measurement equipment.

139 An adaptor is required if a hardened connector of the plug-adaptor-plug type is used. If a
140 hardened connector of the plug-socket type is used, no adaptor is required.

141 **C.4 Patchcord test sample**

142 The patchcord test sample should be placed inside the environmental test chamber as shown
143 in Figure C.3. This configuration can be used for non-hardened and hardened connectors.
144



145

146 **Key**

147 1 environmental test chamber

148 2 patchcord

149 3 pigtail

150 4 adaptor, if required

151 5 incoming and outgoing pigtails whose fibres are connected to the measurement equipment

152

Figure C.3 - Example configuration of a patchcord test sample

153 The length of the patchcord shall be $5,0 \text{ m} \pm 0,5 \text{ m}$, unless otherwise specified. The length of
 154 each pigtail inside the environmental test chamber should be as short as possible. The pigtail
 155 cable type doesn't have to be the same as for the patchcord. The pigtail cable type should not
 156 contribute to the change in attenuation. Adaptors are required if a connector of the plug-adaptor-
 157 plug type is used. If a connector of the plug-socket type is used, no adaptors are required.

158 **C.5 Non-connectorised passive component test sample**

159 This clause shows an example of a passive component test sample. For easy illustration, a
 160 non-connectorised passive component with one incoming and one outgoing fibre or cable is
 161 shown in Figure C.4 a) and Figure C.4 b). For passive component with only one incoming and
 162 no outgoing fibre, and two or more incoming and/or two or more outgoing fibres, the
 163 configuration should be similar as shown in Figure C.4 a) and Figure C.4 b) and the
 164 configuration should be recorded in test report. The non-connectorised passive component test
 165 sample should be placed inside the environmental test chamber as shown in Figure C.4 a) or
 166 Figure C.4 b).

167