
Optični spojni elementi in pasivne komponente - Osnovni preskusni in merilni postopki - 2-44. del: Preskusi - Spreminjanje natezne obremenitve optičnih elementov in komponent (IEC 61300-2-44:2013)

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

STANDARD PREVIEW
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Dispositifs d'interconnexion et composants passifs à fibres optiques - Procédures fondamentales d'essais et de mesures - Partie 2-44: Essais - Flexion du serre-câble des dispositifs à fibres optiques

Ta slovenski standard je istoveten z: prEN IEC 61300-2-44:2023

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86B/4722/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 checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING	<input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY <input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING
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TITLE:

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

PROPOSED STABILITY DATE: 2033

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**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**

FOREWORD

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IEC 61300-2-44 has been prepared by subcommittee SC86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2013. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) replaced active monitoring with transient loss for measurements during test;
- b) harmonized recommended severities according to IEC 61753-1.

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

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

86
87 Full information on the voting for its approval can be found in the report on voting indicated in
88 the above table.

89 The language used for the development of this International Standard is English.

90 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
91 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available
92 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
93 described in greater detail at www.iec.ch/standardsdev/publications.

94 A list of all parts of IEC 61300 series, published under the general title *Fibre optic*
95 *interconnecting devices and passive components – Basic test and measurement procedures*,
96 can be found on the IEC website.

97 The committee has decided that the contents of this document will remain unchanged until the
98 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
99 specific document. At this date, the document will be

- 100 • reconfirmed,
- 101 • withdrawn,
- 102 • replaced by a revised edition, or
- 103 • amended.

104 <https://standards.iteh.ai/catalog/standards/sist/5dccb29c-2d37-4288-9549-e9f50a2c7179/osist-pren-iec-61300-2-44-2023>

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105 **FIBRE OPTIC INTERCONNECTING**
106 **DEVICES AND PASSIVE COMPONENTS –**
107 **BASIC TEST AND MEASUREMENT PROCEDURES –**

108
109 **Part 2-44: Tests –**
110 **Flexing of the strain relief of fibre optic devices and components**
111

112
113
114 **1 Scope**

115 This part of IEC 61300 specifies a test to determine the influence of flexing under tensile load
116 of the strain relief of fibre optic interconnecting devices or components. The intention is to
117 simulate the number of flexing cycles which would typically be experienced during service life.
118 This test is applied to both single fibre cable and multiple fibre cable.

119 **2 Normative references**

120 The following documents, in whole or in part, are normatively referenced in this document and
121 are indispensable for its application. For dated references, only the edition cited applies. For
122 undated references, the latest edition of the referenced document (including any amendments)
123 applies.

124 IEC 61300-1, *Fibre optic interconnecting devices and passive components – Basic test and*
125 *measurement procedures – Part 1: General and guidance*

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

128 IEC 61300-3-28, *Fibre optic interconnecting devices and passive components – Basic test and*
129 *measurement procedures – Part 3-28: Examinations and measurements – Transient loss*

130 IEC 61753 (all parts), *Fibre optic interconnecting devices and passive components –*
131 *Performance standard*

132 IEC 62005 (all parts), *Reliability of fibre optic interconnecting devices and passive components*

133 **3 Terms, definitions, and abbreviated terms**

134 **3.1 Terms and definitions**

135 No terms and definitions are listed in this document.

136 ISO and IEC maintain terminological databases for use in standardization at the following
137 addresses:

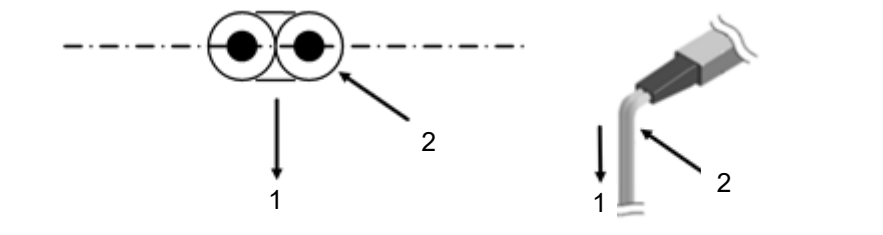
- 138 • IEC Electropedia: available at <http://www.electropedia.org/>
139 • ISO Online browsing platform: available at <http://www.iso.org/obp>

140 **3.2 Abbreviated terms**

- 141
142 • DUT Device under test

143 4 General description

144 During the test, the DUT is rotated $\pm 90^\circ$ in the plane of the cable about an axis perpendicular
 145 to the axis of the attached cable. In the case of non-circular cable (ribbon, duplex, etc.), the
 146 loads shall not be doubled and the rotation is parallel to the width of the minor axis of the cable
 147 as shown in Figure 1. This causes flexing of the strain relief and cable close to the DUT. During
 148 the flexing, a tensile force, but no torque, is applied.



149

150 Key

151 1 tensile load

152 2 duplex cordage

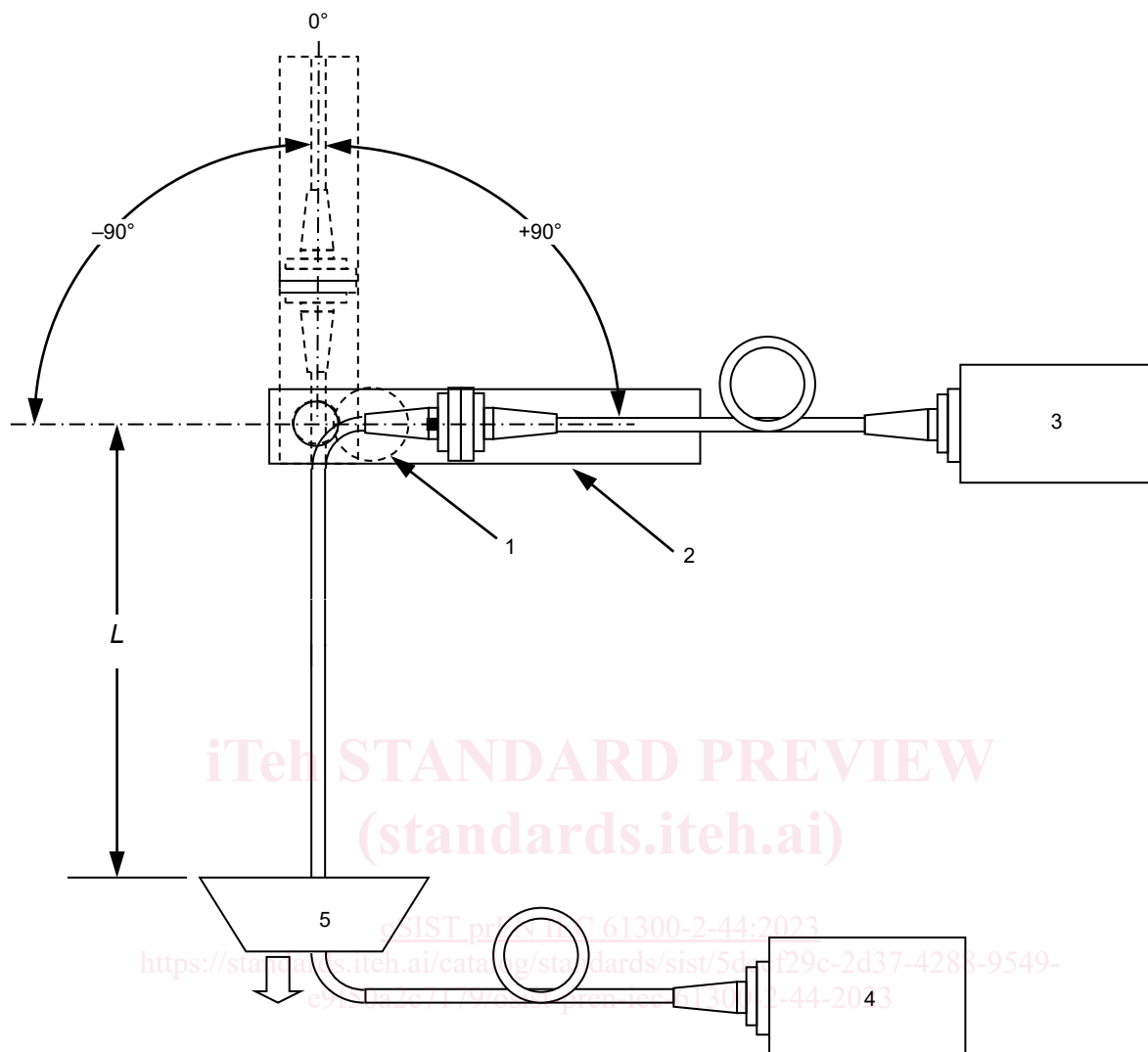
153

154 **Figure 1 – Application of the load in the case of non-circular cable, example of duplex**
 155 **cordage**

156 5 Apparatus

157 5.1 General

158 The apparatus for testing and the flexing patterns involved are presented in Figure 2.



159		
160	Key	
161	1	DUT
162	2	mounting fixture
163	3	optical source
164	4	detector
165	5	tensile load
166	L	length from the point of flexing to the point of application of the tensile load
167	NOTE	Optical source and detector can be exchanged

168

169

Figure 2 – Apparatus for testing**170 5.2 Optical source**

171 The source shall be in accordance with IEC 61300-3-28.

172 5.3 Detector

173 The detector shall be in accordance with IEC 61300-3-28.

174 **5.4 Mounting fixture**

175 The mounting fixture rigidly holds the DUT in correct alignment during the test. If the device is
176 a fibre optic connector, an adaptor or a receptacle may be used as a mounting fixture. The
177 fixture shall not distort the DUT. The fixture shall allow the DUT to be connected to monitoring
178 equipment. The fixture shall be capable of rotating the DUT ± 90 degrees either manually or by
179 using a machine.

180 **5.5 Tensile load**

181 Tensile load to be applied on the DUT shall be specified in the relevant IEC 61753 performance
182 standard or IEC 62005 reliability document. Required tensile load may be created by weights
183 or another suitable mechanism. Values of recommended loads are given in Table 1.

184 **6 Procedure**

185 **6.1 Prepare DUT**

186 Prepare and clean the DUT in accordance with the manufacturer's instructions.

187 Visually check that the attachment of the cable to the fibre optic device is not damaged in
188 accordance with IEC 61300-3-1.

189 **6.2 Preconditioning**

190 Unless otherwise specified, pre-condition the specimen and all equipment for 2 h at the
191 standard atmospheric conditions as defined in IEC 61300-1.

192 **6.3 Mount the DUT**

193 Mount the DUT on the apparatus. [/catalog/standards/sist/5dccb29c-2d37-4288-9549-
e9f50a2c7179/osist-pr-en-iec-61300-2-44-2023](https://www.iso.org/standard/5dccb29c-2d37-4288-9549-e9f50a2c7179/osist-pr-en-iec-61300-2-44-2023)

194 **6.4 Measure of initial optical properties**

195 The flexing arm shall be put in a vertical position.

196 Measure the optical properties specified in the detail specification, such as attenuation and
197 return loss.

198 The initial loss shall be recorded and used as a reference for the evaluation of transient loss
199 during and after test.

200 **6.5 Conditioning**

201 Apply the specified tensile load and apply the specified number of flexing cycles.

202 The cable length from the point of flexing to the point of application of the weight shall be 25
203 cm \pm 5 cm.

204 A flexing cycle contains a movement from position 0° to $+90^\circ$, a movement from position $+90^\circ$
205 to 0° , a movement from position 0° to -90° and a movement from position -90° to 0° .

206 Measure the transient loss during test in accordance with IEC 61300-3-28.

207 Stop the flexing with the flexing arm in vertical position. Remove the tensile load.