



SLOVENSKI STANDARD
oSIST prEN IEC 60794-1-301:2022
01-maj-2022

Optični kabli - 1-301. del: Splošne specifikacije - Osnovni preskusni postopki za optične kable - Preskusne metode za kabelske elemente - Upogibni preskus, metoda G1

Optical fibre cables - Part 1-301: Generic specification - Basic optical cable test procedures - Cable elements test methods - Bend test, Method G1

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Ta slovenski standard je istoveten z: ~~prEN IEC 60794-1-301:2022~~ prEN IEC 60794-1-301:2022

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ICS:

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86A/2180/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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IEC SC 86A : FIBRES AND CABLES	
SECRETARIAT: France	SECRETARY: Mr Laurent Gasca
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
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TITLE:

Optical fibre cables - Part 1-301: Generic specification - Basic optical cable test procedures - Cable elements test methods - Bend test, Method G1

PROPOSED STABILITY DATE: 2025

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES

**Part 1-301 Generic specification – Basic optical
cable test procedures – Cable elements test methods - Bend test, Method
G1**

FOREWORD

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IEC 60794-1-301 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This first edition of IEC 60794-1-301 cancels and replaces Method G1 of the second edition of IEC 60794-1-23:2019. Accordingly, it partially cancels and replaces IEC 60794-1-23:2019. It includes an editorial revision, based on the new structure and numbering system for optical fibre test methods. There are no specific technical changes with respect to the previous edition.

The optical cable element test methods contained in IEC 60794-1-23: 2019 will now be individually numbered in the IEC 60794-1-3xx series. Each test method is now considered to be an individual document rather than part of a multi-test method compendium. Full cross-reference details are given in IEC 60794-1-2.

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

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77 Full information on the voting for its approval can be found in the report on voting indicated in
78 the above table.

79 The language used for the development of this [...an International Standard, a Technical
80 Specification: specify document type...] is **English [change language if necessary]**.

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

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

- 88 • reconfirmed,
- 89 • withdrawn,
- 90 • replaced by a revised edition, or
- 91 • amended.

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INTRODUCTION

94 The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed
95 that compliance with this document may involve the use of a patent. IEC takes no position
96 concerning the evidence, validity, and scope of this patent right.

97 The holder of this patent right has assured IEC that s/he is willing to negotiate licences under
98 reasonable and non-discriminatory terms and conditions with applicants throughout the world.
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OPTICAL FIBRE CABLES

Part 1-301: Generic specification – Basic optical cable test procedures – Bend test for cable elements

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1 Scope

113 This part of IEC 60794 describes test procedures to be used in establishing uniform
114 requirements of optical fibre cable elements for the mechanical property- bending.

115 This document applies to optical fibre cables for use with telecommunication equipment and
116 devices employing similar techniques, and to cables having a combination of both optical fibres
117 and electrical conductors.

118 Throughout the document, the wording "optical cable" can also include optical fibre units,
119 microduct fibre units, etc.

120

2 Normative references

122 The following documents are referred to in the text in such a way that some or all of their content
123 constitutes requirements of this document. For dated references, only the edition cited applies.
124 For undated references, the latest edition of the referenced document (including any
125 amendments) applies.

126 IEC 60794-1-2, *Optical fibre cables – Part 1-2: Generic specification – Basic optical cable test
127 procedures – General guidance*

128 IEC 60793-1-46, *Optical fibres – Part 1-46: Measurement methods and test procedures –
129 Monitoring of changes in optical transmittance*

130

3 Terms and definitions

132 No terms and definitions are listed in this document.

133 ISO and IEC maintain terminological databases for use in standardization at the following
134 addresses:

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

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4 General requirements

139 IEC 60794-1-2 is the reference guide to test methods of all types. It shall be considered for
140 general requirements and definitions.

141

5 Method G1: Bend test for optical cable elements

5.1 Object

144 The purpose of this test is to characterize cable elements for splicing purposes by determining
145 the attenuation increase of an optical cable element (fibre, ribbon, core tube, breakout unit,
146 etc.) when bent within a splice closure or similar device.

147 **5.2 Sample**

148 The length of the sample of optical cable element shall be sufficient to carry out the testing
149 specified.

150 **5.3 Apparatus**

151 The apparatus consists of a mandrel having a smooth surface with diameter as stated in the
152 relevant specification, and an attenuation measuring apparatus for the determination of
153 attenuation change (according to test method IEC 60793-1-46).

154 **5.4 Procedure**

155 The element to be tested shall be wound on the mandrel at minimal tension; the number of turns
156 and cycles shall be stated in the specification.

157 Precondition the sample for at least 4 hours at the test temperature(s).

158 The change in attenuation should be measured during and after test.

159 **5.5 Requirements**

160 Any increase in attenuation shall comply with the limits shown in the detail specification.

161 **5.6 In order to measure the attenuation increase caused by bending, allowance
162 should be made for the intrinsic attenuation of the fibre. Details to be specified**

163 The relevant specification shall include the following:

- 164 a) optical test wavelength;
165 b) diameter of the mandrel;
166 c) number of turns;
167 d) number of cycles for winding and unwinding the turns;
168 e) temperature at which the evaluation shall be performed if different from room temperature;
169 testing at different temperatures shall be based on min/max installation or termination
170 temperature of the cable.

172 **5.7 Details to be reported**

173 The test report shall include beside the specified parameters in the relevant specification (see
174 5.6) the following information, if applicable:

- 175 a) Apparatus and attenuation measurement technique;
176 b) Attenuation variation during and after test.

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Bibliography

181 IEC 60794-1-21:2015, *Optical fibre cables – Part 1-21: Generic specification – Basic optical*
182 *cable test procedures – Mechanical tests methods*

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