



**SLOVENSKI STANDARD**  
**oSIST prEN IEC 60794-1-305:2022**  
**01-april-2022**

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**Optični kabli - 1-305. del: Splošne specifikacije - Osnovni preskusni postopki za optične kable - Preskusne metode za kabelske elemente - Vzдолžno trganje (ločljivost), metoda G5**

Optical fibre cables - Part 1-305: Generic specifications - Basic optical cable test procedures - Cable element test methods - Ribbon tear (separability), Method G5

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**Ta slovenski standard je istoveten z: ~~prEN IEC 60794-1-305:2022~~**

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**ICS:**

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# 86A/2158/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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SECRETARIAT: France	SECRETARY: Mr Laurent Gasca
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/>
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FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
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<p><b>Attention IEC-CENELEC parallel voting</b></p> <p>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.</p> <p>The CENELEC members are invited to vote through the CENELEC online voting system.</p>	

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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.

TITLE:

**Optical fibre cables - Part 1-305: Generic specifications – Basic optical cable test procedures – Cable element test methods - Ribbon tear (separability), Method G5**

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OPTICAL FIBRE CABLES

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**Part 1-305: Generic specifications – Basic optical  
 cable test procedures – Cable element test methods - Ribbon tear  
 (separability), Method G5**

## FOREWORD

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IEC 60794-1-305 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This first edition of IEC 60794-1-305 cancels and replaces Method G5 of the second edition of IEC 60794-1-23:2019, which is withdrawn. 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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80 Full information on the voting for its approval can be found in the report on voting indicated in  
81 the above table.

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

83 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in  
84 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available  
85 at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are  
86 described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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.

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## INTRODUCTION

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

99 The holder of this patent right has assured IEC that s/he is willing to negotiate licences under  
100 reasonable and non-discriminatory terms and conditions with applicants throughout the world.  
101 In this respect, the statement of the holder of this patent right is registered with IEC. Information  
102 may be obtained from the patent database available at <http://patents.iec.ch>.

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## OPTICAL FIBRE CABLES

### Part 1-305: Basic optical cable test procedures – Cable element test methods - Ribbon tear (separability), Method G5

#### 1 Scope

116 This part of IEC 60794 describes test procedures to be used in establishing uniform  
117 requirements of optical fibre ribbons as optical fibre cable elements for the mechanical property-  
118 tear (separability).

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

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

124 This test is applicable for edge-bonded ribbons and encapsulated ribbons specified in IEC  
125 60794-1-31, and not intended to be used for partially-bonded ribbons.

126

#### 2 Normative references

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

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

134 IEC 60794-1-31, *Optical fibre cables – Part 1-31: Generic specification – Optical cable elements  
135 – Optical fibre ribbon*

136

#### 3 Terms and definitions

138 No terms and definitions are listed in this document.

139 ISO and IEC maintain terminological databases for use in standardization at the following  
140 addresses:

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

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#### 4 General requirements

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

147



148 **5 Method G5: Ribbon tear (separability)**

149 **5.1 Object**

150 The purpose of this test is to assure sufficient tear resistance for ribbons where the fibres are  
151 not required to be separable, or to assure sufficient separability of the fibres for ribbons where  
152 the fibres are required to be separated. The intention of this test is to be able to tear the ribbon  
153 by hand without damage to the fibre coatings.

154 **5.2 Sample**

155 A number of samples of fibre ribbon, as specified in the detail specification, typically 3 to 5,  
156 shall be selected from the ribbon or ribbons to be tested. The length of each sample shall be  
157 sufficient to provide the number of test specimens as detailed below.

158 For an  $n$  fibre ribbon,  $n/2$  specimens are taken from each of the samples above. Each specimen  
159 shall be 100 mm minimum length, consistent with Figure 1.

160 Prepare the  $n/2$  specimens involving increasing numbers of fibres to be separated as a ribbon  
161 unit. That is, a specimen for fibre 1; a specimen for fibres 1 to 2; a specimen for fibres 1 to 3;  
162 etc.

163 The fibres to be tested are separated with a knife or other suitable method on a suitable length  
164 for clamping, per Figure 1.

165 For the first sample, the preparation of the test sequence shall be to separate one fibre from  
166 the other fibres in the ribbon in the first specimen. Then, separate a unit of two fibres from the  
167 next specimen. Then, units of three, four, etc. fibres are separated in the other specimens, up  
168 to a unit of  $n/2$  fibres in the last specimen.

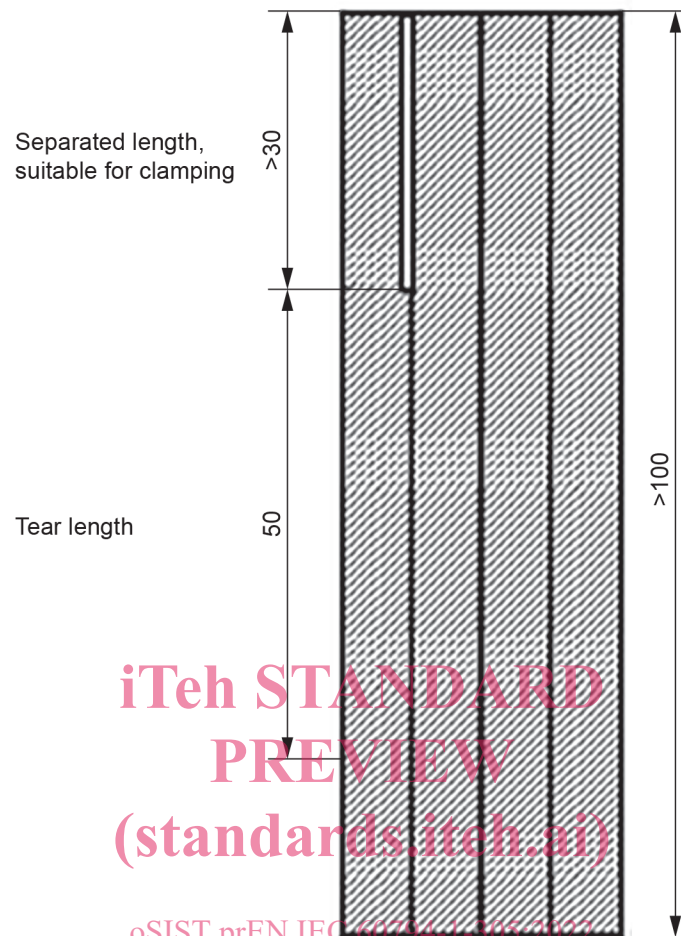
169 Do the same preparation for all the other samples.

170 NOTE If  $n$  is an odd number, replace  $n/2$  with  $(n-1)/2$  in the above description.

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Dimensions in millimetres



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**Figure 1 – Sample preparation for ribbon separability test**

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### 5.3 Apparatus

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The apparatus consists of

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a) a tensile strength measuring apparatus with suitable clamping devices and suitable force recording functions, and

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b) a microscope with at least 100 × magnification.

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### 5.4 Procedure

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The specimen is inserted into the strength measuring apparatus, as shown in Figure 2. The fibres to be tested are torn at a speed of approximately 100 mm/min to 500 mm/min. The force to tear the fibres on a minimum length of 50 mm is continuously recorded.

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In the case where fibres are required to be separated, the primary coating of the separated fibre(s) shall be visually inspected by means of a microscope.

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186

The procedure is repeated for the specimens involving separation of fibre 1, fibres 1 to 2, fibres 1 to 3, etc. up through fibres 1 to  $n/2$ .

187