
Optični kabli - 1-309. del: Splošna specifikacija - Osnovni preskusni postopki za optične kable - Preskusne metode za kabelske elemente - Iztekanje in izhlapevanje polnila ali zalivnih zmesi, metoda G9

Optical fibre cables - Part 1-309: Generic specification - Basic optical cable test procedures - Cable element test methods- Bleeding and evaporation of filling or flooding compounds, Method G9

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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: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING ☐ 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.	

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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 1-309: Generic specification - Basic optical cable test procedures - Cable element test methods- Bleeding and evaporation of filling or flooding compounds, Method G9

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NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES-

**Part 1-309: Generic specification - Basic optical cable test procedures -
Cable element test methods- Bleeding and evaporation of filling or
flooding compounds, Method G9**

FOREWORD

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International Standard IEC 60794-1-309 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This first edition of IEC 60794-1-309 cancels and replaces Method G9 of IEC 60794-1-23:2019 Edition 2.0, which is withdrawn.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.

The text of this is based on the following documents:

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

- 70
71 Full information on the voting for the approval of this International Standard can be found in the
72 report on voting indicated in the above table.
- 73 The language used for the development of this [...an International Standard, a Technical
74 Specification: specify document type...] is English [change language if necessary].
- 75 This document was drafted in accordance with ISO/IEC Directives, Part 2.
- 76 A list of all parts in the IEC 60794 series, published under the general title *Optical fibre cables*,
77 can be found on the IEC website.
- 78 The committee has decided that the contents of this document will remain unchanged until the
79 stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to
80 the specific document. At this date, the document will be
- 81 reconfirmed,
82 withdrawn,
83 replaced by a revised edition, or
84 amended.

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INTRODUCTION

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

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

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OPTICAL FIBRE CABLES-

Part 1-309: Generic specification - Basic optical cable test procedures - Cable element test methods- Bleeding and evaporation of filling or flooding compounds, Method G9

1 Scope

This part of IEC 60794 describes test procedures to be used in establishing uniform requirements of optical fibre cable element, the filling compounds or flooding compounds, for the environmental property- bleeding and evaporation.

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

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

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

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

4 General requirements

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

5 Method G9: Bleeding and evaporation

5.1 Object

The purpose of this test is to measure at high temperature the bleeding and/or evaporation of filling compounds or flooding compounds used in optical fibre cables.

5.2 Sample

Filling or flooding compound material intended to be used in contact with optical fibres shall be prepared with sufficient amount to perform the test.

5.3 Apparatus

The apparatus consists of

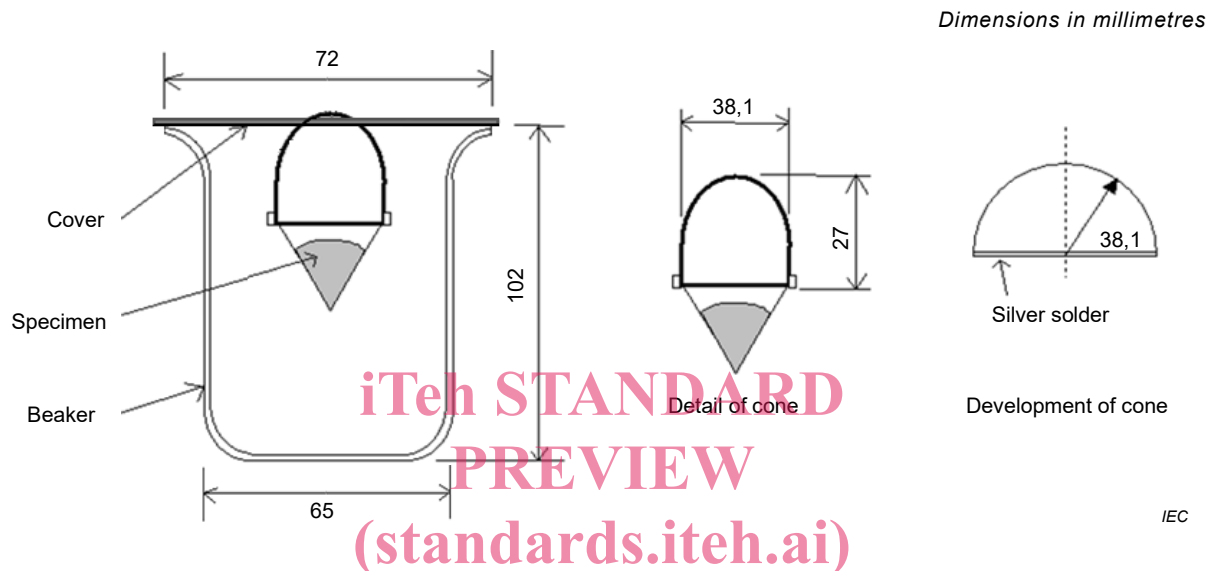
- an electric heating cabinet with natural ventilation,
- an analytical balance with an error limit $G = 0,1$ mg, and

c) the test set-up (see Figure 1), consisting of the following:

- 1) a cone, nickel, gauze, 60 mesh (holes: 5,6 per mm²; wire diameter: 0,19 mm; opening: 0,28 mm), with a wire handle;

NOTE Alternatively the cone can consist of stainless steel (60 mesh, opening 0,25 mm) and the solder width can be more than 1 mm, provided it is proved that the results are not significantly different from the first one.

- 2) a beaker, tall-form, without a spout, 200 ml;
- 3) a metal rod, with length slightly larger than diameter of the beaker top;
- 4) a desiccator



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Figure 1 – Bleeding and evaporation test set-up

5.4 Procedure

Perform the test by the following procedure:

- a) clean the cone with proper organic solvent (ethanol, etc.) and wait till the cone is dry;
- b) weigh clean dry beaker and record as M_1 (weighed to within 1 mg). Weigh the assembled beaker, cone, and cone support (the metal rod) and record as M_2 ;
- c) add about 10 g of sample to the cone (the upper surface shall be smooth and convex so that fluid is not trapped and there shall be no aggregate materials in the gauze mesh). Weigh the assembled apparatus and sample and record as M_3 ;

- d) heat the test set-up in the cabinet at the temperature and for the duration stated in the detail specification. Cool to room temperature in the desiccator;

- e) reweigh the assembled apparatus and record as M_4 ;

NOTE This step can be skipped when measuring only the bleeding.

- f) carefully remove the cone support and cone. Reweigh the beaker and record as M_5 ;

NOTE This step can be skipped when measuring only the evaporation

- g) calculate the percentage bleeding or evaporation according to Formula (1) and (2), and report the average of the duplicate results.

B characterize the bleeding and is the amount

$$B = \frac{M_5 - M_1}{M_3 - M_2} \times 100 \quad (1)$$

171 E characterize the evaporation and is the amount

$$E = \frac{M_3 - M_4}{M_3 - M_2} \times 100 \quad (2)$$

173 where

174 *B* is the amount of compound which has bled into the beaker, %;

175 *E* is the amount of compound missing from the system, %.

176 5.5 Requirements

177 The reported average results shall not exceed the maximum values given in the detail
178 specification.

179 5.6 Details to be specified

180 The detail specification shall include the following:

- 181 a) test temperature;
- 182 b) duration of test;
- 183 c) type of cone to be used if differing from that of 5.3, c), 1);
- 184 d) number of samples to be tested;
- 185 e) maximum allowed bleeding and evaporation.

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