

INTERNATIONAL STANDARD

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**Optical fibre cables -
Part 1-110: Generic specification - Basic optical cable test procedures -
Mechanical tests methods - Kink, Method E10**

**Câbles à fibres optiques -
Partie 1-110: Spécification générique - Procédures fondamentales d'essais des
câbles optiques - Méthodes d'essais mécaniques - Pliure (effet de paille),
Méthode E10**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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IEC 60794-1-110 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics. It is an International Standard.

This first edition cancels and replaces Method E10 of the first edition of IEC 60794-1-21:2015, which will be withdrawn. This edition constitutes a technical revision.

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

- a) addition of "4.7";
- b) addition of "Annex A".

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

| Draft | Report on voting |
|--------------|------------------|
| 86A/2436/CDV | 86A/2559/RVC |

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

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

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

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

- reconfirmed,
- withdrawn, or
- revised.

1 Scope

This part of IEC 60794 defines test procedures used to establishing uniform requirements for mechanical performance – kink. It 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.

IEC 60794-1-2 gives general requirements, definitions and a complete reference guide to test methods of all types.

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 60794-1-1, *Optical fibre cables - Part 1-1: Generic specification - General*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60794-1-1 apply.

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

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

4 Method E10: Kink

4.1 Object

The purpose of this test is to evaluate if no kink occurs when bending an optical fibre cable to a specified minimum loop diameter.

Testing has indicated that the results of this test for cables have limited reproducibility. The test should therefore be used with caution and any minimum kink requirement should be conservative.

4.2 Sample

A short cable sample shall be taken from a finished cable length and the sample length shall be sufficient to make a loop as shown in Figure 1.

4.3 Apparatus

No particular apparatus is required if the test can be done by hand. It is useful to clamp the cable without tightening at the intersection point of the loop.

If the cable sample is rigid and it is difficult to reach the onset of kinking by hand, using a tensile machine can be an option. See Annex A for the recommended test conditions if using a tensile machine for the kink test.