

INTERNATIONAL STANDARD

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**Optical fibre cables -
Part 1-119: Generic specification - Basic optical cable test procedures -
Mechanical tests methods - Aeolian vibration, Method E19**

**Câbles à fibres optiques -
Partie 1-119: Spécification générique - Procédures fondamentales d'essais des
câbles optiques - Méthodes d'essais mécaniques - Vibrations éoliennes,
Méthode E19**



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CONTENTS

FOREWORD	2
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
3.1 Terms and definitions	4
3.2 Abbreviated terms	4
4 Method E19: aeolian vibration	4
4.1 Object	4
4.2 Sample	5
4.3 Apparatus	5
4.4 Procedure	5
4.5 Requirements	6
4.6 Details to be specified	7
4.7 Details to be reported	7
Annex A (informative) Aeolian vibration basics	8
Bibliography	10
Figure 1 – Aeolian vibration test	5
Figure A.1 – Standing wave vibration	8

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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IEC 60794-1-119 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 test method E19 of the first edition of IEC 60794-1-21 published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 60794-1-21:

- a) addition of a system to maintain a constant cable tension during the test as well as means to measure the free loop antinode amplitude;
- b) definition of the cable load which is now fixed to 25 % of the rated tensile strength for OPGW/OPPC, or to the maximum installation tension (MIT) for ADSS cables;
- c) addition of the target free loop peak-to-peak antinode amplitude to the procedure. The quality of the aeolian vibration motion is done through the average antinode peak velocity;
- d) addition of fatigue damage and ovality changes of the optical core to 4.5.

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

Draft	Report on voting
86A/2573/FDIS	86A/2596/RVD

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.

A list of all parts in the IEC 60794 series, published under the general title *Optical fibre cables*, can be found on the IEC website.

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 applies to aerial optical fibre cables such as all-dielectric self-supporting (ADSS) cables, optical ground wire (OPGW) cables, and optical phase conductor (OPPC) cables that can be exposed to aeolian vibrations.

This document defines the test procedures to establish uniform mechanical performance requirements relating to aeolian vibrations.

See IEC 60794-1-2 for general requirements and definitions and for 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 60793-1-46, *Optical fibres - Part 1-46: Measurement methods and test procedures - Monitoring of changes in attenuation*.

3 Terms and definitions

3.1 Terms and definitions

No terms and definitions are listed in this document.

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>

3.2 Abbreviated terms

ADSS	all-dielectric self-supporting cable
OPGW	optical ground wire cable
OPPC	optical phase conductor cable
OTDR	optical time domain reflectometer
RTS	rated tensile strength
MIT	maximum installation tension

4 Method E19: aeolian vibration

4.1 Object

The purpose of the test is to expose aerial optical cables and their support hardware to dynamic stresses similar to those imposed by laminar wind-flow-induced vibrations in overhead lines. The method is intended to assess the fatigue performance of the aerial cable and the optical performance of the optical fibres under such conditions.