

SLOVENSKI STANDARD

SIST EN 3745-510:2017

01-maj-2017

Nadomešča:

SIST EN 3745-510:2012

Aeronavtika - Optična vlakna in kabli za uporabo v zračnih plovilih - Preskusne metode - 510. del: Upogibni preskus

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 510: Bending test

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 510: Biegetest

Série aéronautique - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 510: Essai de courbure

[standards.iteh.ai](https://standards.iteh.ai/catalog/standards/sist/dd9e8e27-3d38-4c4e-9186-05231488b330/sist-en-3745-510-2017)

Ta slovenski standard je istoveten z: EN 3745-510:2017

ICS:

33.180.10	(Optična) vlakna in kabli	Fibres and cables
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

SIST EN 3745-510:2017

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 3745-510:2017

<https://standards.iteh.ai/catalog/standards/sist/dd9e8e27-3d38-4c4e-9186-05231488b330/sist-en-3745-510-2017>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 3745-510

March 2017

ICS 49.060

Supersedes EN 3745-510:2012

English Version

**Aerospace series - Fibres and cables, optical, aircraft use -
Test methods - Part 510: Bending test**

Série aérospatiale - Fibres et câbles optiques à usage
aéronautique - Méthodes d'essais - Partie 510: Essai de
courbure

Luft- und Raumfahrt - Faseroptische Leitungen für
Luftfahrzeuge - Prüfverfahren - Teil 510: Biegetest

This European Standard was approved by CEN on 29 July 2016.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
European foreword	3
1 Scope.....	4
2 Normative references.....	4
3 Preparation of specimens	4
4 Apparatus.....	5
5 Methods	7

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 3745-510:2017](https://standards.iteh.ai/catalog/standards/sist/dd9e8e27-3d38-4c4e-9186-05231488b330/sist-en-3745-510-2017)
<https://standards.iteh.ai/catalog/standards/sist/dd9e8e27-3d38-4c4e-9186-05231488b330/sist-en-3745-510-2017>

European foreword

This document (EN 3745-510:2017) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 3745-510:2012.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 3745-510:2017 (E)

1 Scope

This European Standard specifies a method of determining the attenuation variation of an optical cable during mechanical bending under load at the maximum and minimum operating temperatures.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2591-100, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 100: General*

EN 3745-100, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 100: General*

EN 3745-201, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 201: Visual examination*

EN 3745-301, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 301: Attenuation*

3 Preparation of specimens

3.1 General

The specimens shall be prepared according to the product standard.

If not yet at standard test conditions, the specimens shall be subjected to standard test conditions and stabilized at these conditions for 24 h as defined in EN 2591-100.

3.2 Method A

Unless specified in the technical specification, the following details shall be stated:

- Number and length of or cable (standard concerns cable only).
- Mass M to be applied to ensure contact between the cable and the mandrel.
- Diameter(s) D of the mandrel.
- Number of turns N .
- Maximum permissible variation of attenuation induced after N turns (according to EN 3745-301).
- Maximum permissible variation of attenuation 1 h after the end of the test.
- Maximum permissible residual attenuation after removal from test set-up.
- The wavelengths to be measured.

3.3 Method B

Unless specified in the applicable product standard, the following details shall be stated:

- The number and length of specimens.
- Mass M to be applied to ensure contact between the cable and the mandrel.
- Diameter(s) D of the mandrel.
- The separation distance between the mandrels (L).
- The number of wraps around the mandrels (N).
- The maximum permissible variation in attenuation.
- The wavelengths to be measured.

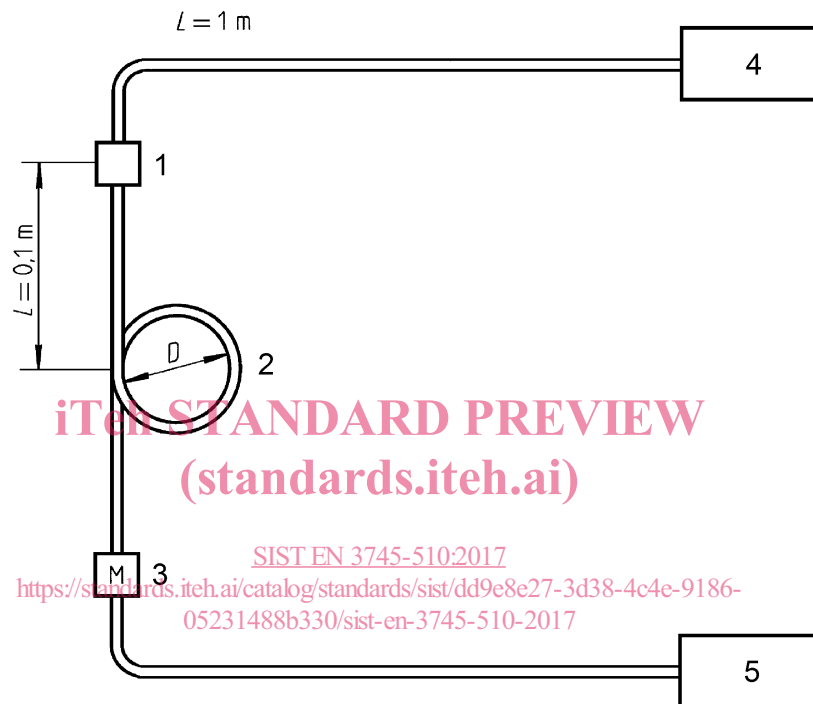
4 Apparatus

4.1 Method A

The apparatus shall comprise:

- A Light Launch System (LLS) as defined in EN 2591-100.
- A Light Detection System (LDS) as defined in EN 2591-100.
- A test fixture capable of applying the bending test required by the specification.

A typical arrangement is shown in Figure 1.



Key

- 1 Fixed point
- 2 Fixed mandrel
- 3 Mass
- 4 LLS
- 5 LDS

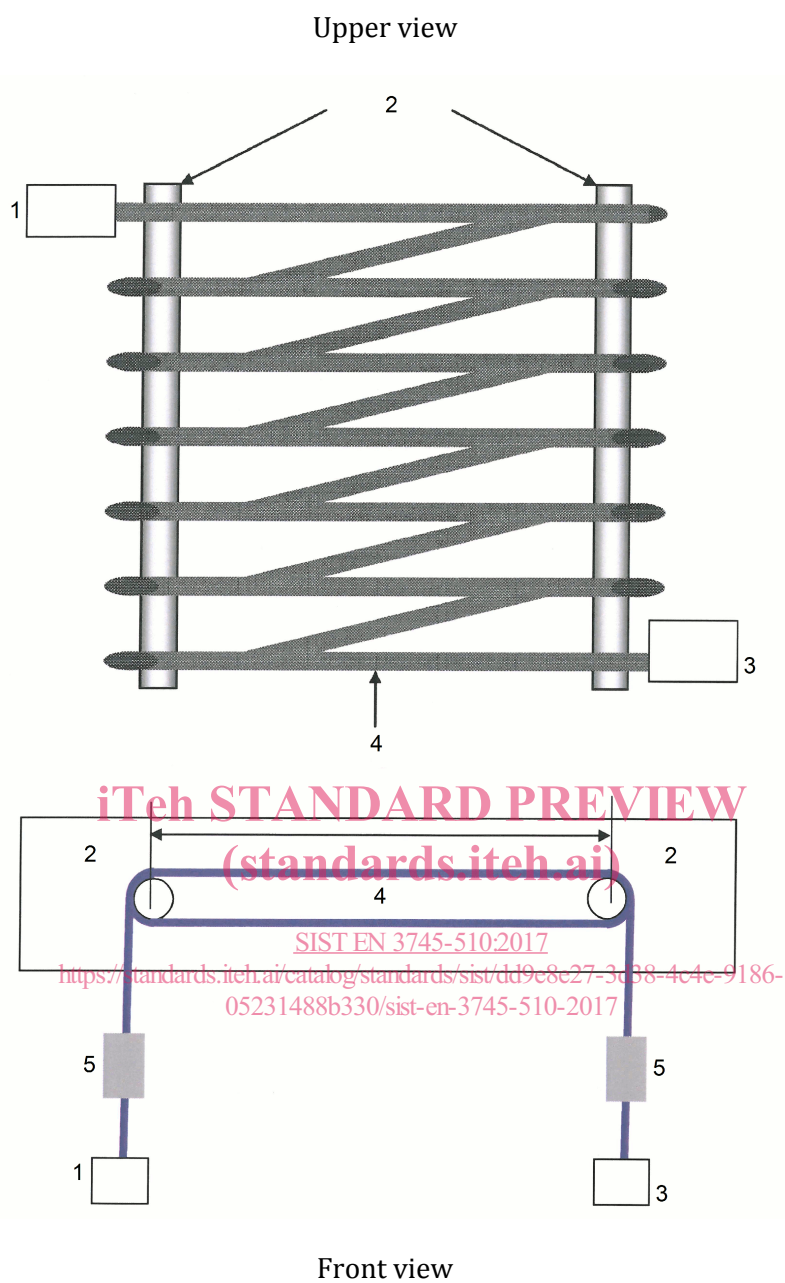
Figure 1

4.2 Method B

The apparatus shall comprise:

- A Light Launch System (LLS) as defined in EN 2591-100.
- A Light Detection System (LDS) as defined in EN 2591-100.
- A test fixture capable of applying the bending test required by the specification.

A typical arrangement is shown in Figure 2.

**Key**

- 1 LLS
- 2 Mandrels
- 3 LDS
- 4 Fibre optic cable
- 5 Weights

Figure 2