

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

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 3745-510:2012 sisaldab Euroopa standardi EN 3745-510:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 3745-510:2012 consists of the English text of the European standard EN 3745-510:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.08.2012.	Date of Availability of the European standard is 22.08.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

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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 23 March 2012.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
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<b>Contents</b>		<b>Page</b>
Foreword.....		3
1	Scope .....	4
2	Normative references .....	4
3	Preparation of specimens .....	4
4	Apparatus .....	5
5	Methods .....	7

## Foreword

This document (EN 3745-510:2012) 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 February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

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 3745-510:2002.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 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:

- type and length of fibre or cable;
- 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 by each turn up to  $N$  (EN 3745-301);
- variation of attenuation 1 h after the end of the test;
- permissible residual attenuation after removal from test set-up.

### 3.3 Method B

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

- the number and length of specimens;
- the mandrel diameters;
- the separation distance between the mandrels;
- the number of wraps around the mandrels;
- the maximum permissible variation in attenuation;
- the wavelengths to be measured.