



**SLOVENSKI STANDARD
SIST EN 3745-510:2004**

01-maj-2004

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

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

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

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Ta slovenski standard je istoveten z: EN 3745-510:2002

ICS:

49.060 Štejni in optični kabli za uporabo v letalstvu in vesoljski tehniki
Aerospace electric equipment and systems

SIST EN 3745-510:2004

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 3745-510

June 2002

ICS 49.060

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
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This European Standard was approved by CEN on 1 March 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN 3745-510:2002 (E)**Foreword**

This document (EN 3745-510:2002) has been prepared by the European Association of Aerospace Manufacturers (AECMA).

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 AECMA, 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 December 2002, and conflicting national standards shall be withdrawn at the latest by December 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies a method of checking the ability of an optical cable to bending test on a mandrel for aerospace application.

2 Normatives references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 2591-100	Aerospace series – Elements of electrical and optical connection – Test methods – Part 100: General ¹⁾
EN 3745-100	Aerospace series – Fibres and cables, optical, aircraft use – Test methods – Part 100: General ²⁾
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

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3 Preparation of specimens

3.1 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 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.

1) Published as AECMA Prestandard at the date of publication of this standard

2) In preparation at the date of publication of this standard

EN 3745-510:2002 (E)

4 Apparatus

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.

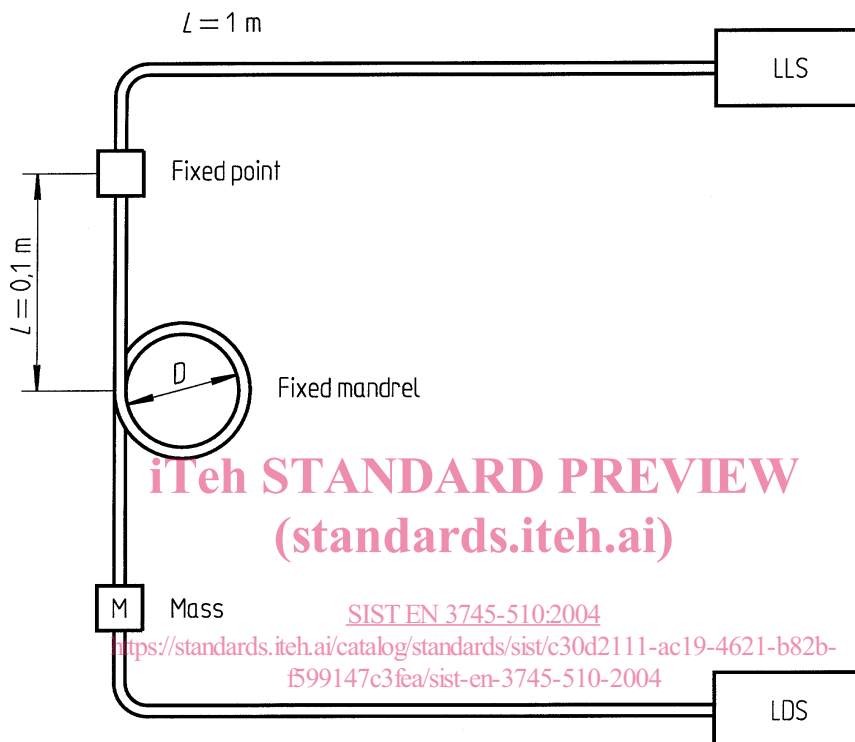


Figure 1

5 Method

5.1 Procedure

Connect the specimen end to the LLS.

After fixation of this specimen on the fixed point, install the mass on the specimen.

Connect the specimen end to the LDS.

Zero the LDS.

Roll up the specimen one turn on the mandrel.

Measure the variation of attenuation (EN 3745-301, method C).

Repeat N times the two last operations.

Maintain the specimen on the test equipment for 1 h and then remeasure the variation of attenuation.

5.2 Final measurements and requirements

- Measure the residual attenuation (EN 3745-301, method C) after removing the specimen from the test equipment.
- EN 3745-201 – Visual examination