SLOVENSKI STANDARD

SIST EN 3745-512:2006

01-julij-2006

Aeronavtika ï Optiļ na vlakna in kabli za uporabo v zraļ nih plovilih ï Preskusne metode ï 512. del: Upogibna trdnost

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 512: Flexure endurance

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 512: Biegefestigkeit

Série aérospatiale - Fibres et câbles optiques a usage aéronautique - Méthodes d'essais - Partie 512 : Résistance a la flexion

Ta slovenski standard je istoveten z: EN 3745-512:2005

ICS:

49.060

SIST EN 3745-512:2006 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 3745-512

November 2005

ICS 49.060

English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 512: Flexure endurance

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 512 : Résistance à la flexion

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 512: Biegefestigkeit

This European Standard was approved by CEN on 19 September 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

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

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

Ref. No. EN 3745-512:2005: E

Contents

Foreword

This European Standard (EN 3745-512:2005) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 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 May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

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.

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

1 Scope

This standard specifies a method for testing flexure endurance of the cable when it is subjected to alternating flexing.

2 Normative references

The following referenced documents are indispensable for the application 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.

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*[1)]

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 The specimen shall be prepared as specified in EN 3745-100.

3.2 The following details shall be specified if not already included in the product standard:

— type of specimen;

— number of specimens if different of 3;

— length if not 1 m;

— mass M value if not 300 g;

— diameter D of mandrels if not 20 times the cable diameter;

— static bend radius;

— maximum permissible Variation of attenuation;

— number of cycles.

1) In preparation at the date of publication of this standard.

4 Apparatus

The apparatus shall comprise:

— a Light Launch System (LLS) as defined in EN 2591-100;
— a Light Detector System (LDS) as defined in EN 2591-100;
— a test fixture capable of applying the flexure endurance test.

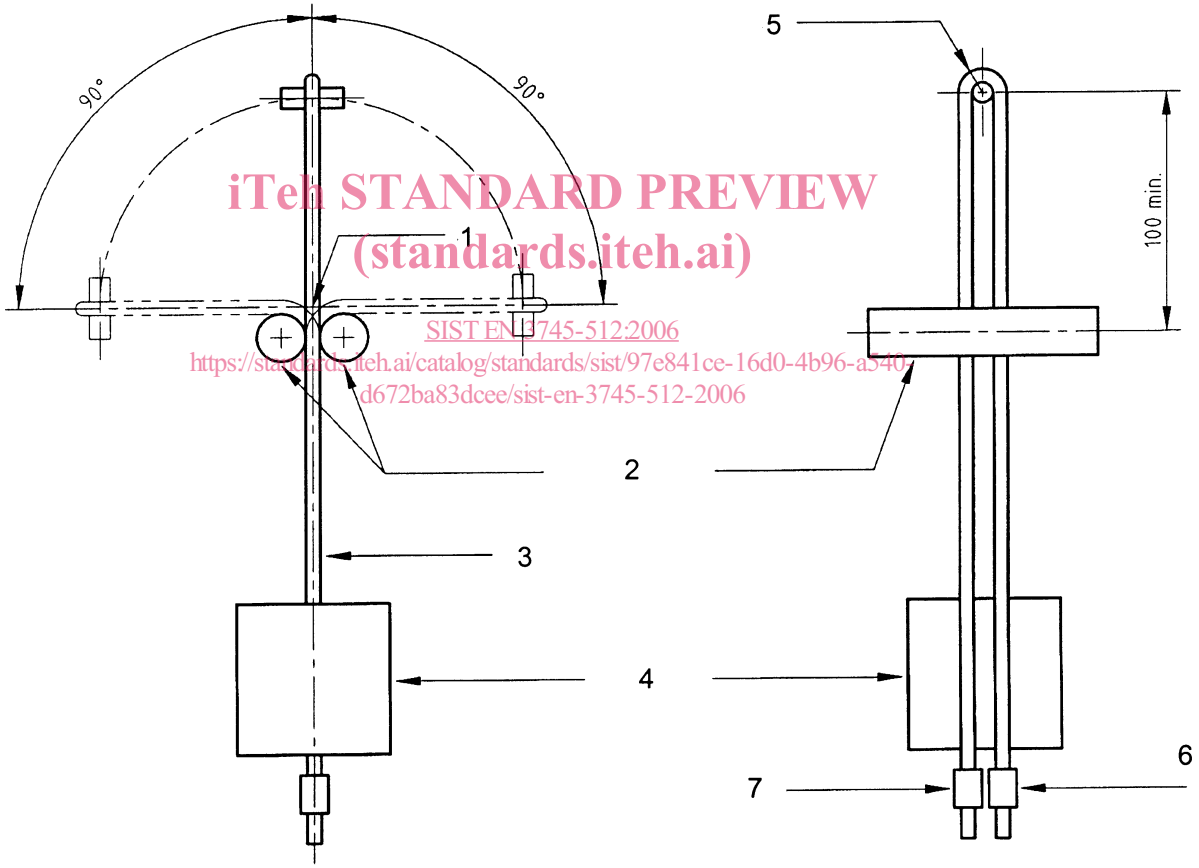
A typical arrangement is shown in Figure 1

The rotation speed shall be a uniform rate of (18 ± 2) cycles/min with the cable vertical, a cycle is defined by a rotation of 90° left, return to the vertical, rotation of 90° right and return to the vertical.

The space between mandrels is equal to the maximum diameter of the tested cable.

The apparatus shall be fitted with a counter.

Dimensions in millimetres



Key
1 Centre of rotation
2 Mandrels (∅ D)
3 Cable
4 Mass M
5 Min. static bend radius
6 LDS
7 LLS

Figure 1

5 Method

5.1 Procedure

The attenuation shall be monitored throughout the test in accordance with EN 3745-301 method C.

Install the specimen on apparatus.

Apply the specified load M to optical cable.

Perform a preliminary run and if necessary adjust the distance between mandrels and attached load to avoid resonance effects.

Connect the end specimen to LLS and LDS.

Zero the LDS to obtain a reference level.

Reset the counter.

Perform the specified number of cycles.

5.2 Requirements

Examine the test specimen for damage in accordance with EN 3745-201: Visual examination.

The change in attenuation shall be less than the specified value.