SLOVENSKI STANDARD

SIST EN 2591-609:2006

01-julij-2006

Aeronavtika ï Elementi elektriļnih in optiļnih povezav ï Preskusne metode ï 609. del: Optiļni elementi ï Uļ inkovitost kabelskih priključuļ kov ï Cikliļ na fleksibilnost kabla

Aerospace series - Elements of electrical and optical connection - Test methods - Part 609: Optical elements - Effectiveness of cable attachment - Cable cyclic flexing

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 609: Optische Elemente - Wirksamkeit der Leitungsbefestigung - Zyclische Flexibilität

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 609 : Organes optiques - Efficacité de l'attache du câble - Flexion cyclique du câble

Ta slovenski standard je istoveten z: **EN 2591-609:2005**

ICS:

49.060

SIST EN 2591-609:2006 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 2591-609

October 2005

ICS 49.060

English Version

Aerospace series - Elements of electrical and optical connection - Test methods - Part 609: Optical elements - Effectiveness of cable attachment - Cable cyclic flexing

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 609 : Organes optiques - Efficacité de l'attache du câble - Flexion cyclique du câble

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 609: Optische Elemente - Wirksamkeit der Leitungsbefestigung - Zyclische Flexibilität

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 2591-609:2005: E

Contents

Page

Foreword

This European Standard (EN 2591-609:2005) 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 April 2006, and conflicting national standards shall be withdrawn at the latest by April 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 three methods of checking the effectiveness of cable attachment in the cyclic flexing mode for optical connection elements (including permanent connections) and fibre optic couplers.

It shall be used together with EN 2591-100.

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 2591-601, *Aerospace series – Elements of electrical and optical connection – Test methods – Part 601: Optical elements – Insertion loss.*

EN 2591-602, *Aerospace series – Elements of electrical and optical connection – Test methods – Part 602: Optical elements – Variation of attenuation and optical discontinuity.*

EN 2591-6101, *Aerospace series – Elements of electrical and optical connection – Test methods – Part 6101: Optical elements – Visual examination.*

3 Preparation of specimens

3.1 The specimens shall be fitted with normal accessories and terminated as specified in 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 otherwise indicated in the technical specification, the following details shall be stated:

— type and length of cable/fibre (L2);

— load;

— maximum permissible variation of attenuation;

— maximum value of insertion loss.

4 Apparatus

See EN 2591-602 plus:

— a test set-up capable of applying the flexing cycles at the specified rate;

— method A: a typical arrangement is shown in Figure 1;

— method B: a typical arrangement is shown in Figure 2;

— method C: a typical arrangement is shown in Figure 3.

5 Methods

5.1 Method A procedure

A mated pair of optical connection elements, couplers or splices shall be fitted to the set-up as shown in Figure 1.

The specimen shall be rotated 180° in one direction from the start position, then returned to the start position. This defines one cycle.

The minimum admissible radius (*R*) shall be six times the diameter of the cable or cable bundle size, but not less than 20 mm.

The cable shall run freely in the guide (G).

The number of cycles shall be 100, unless otherwise specified in the product standard.

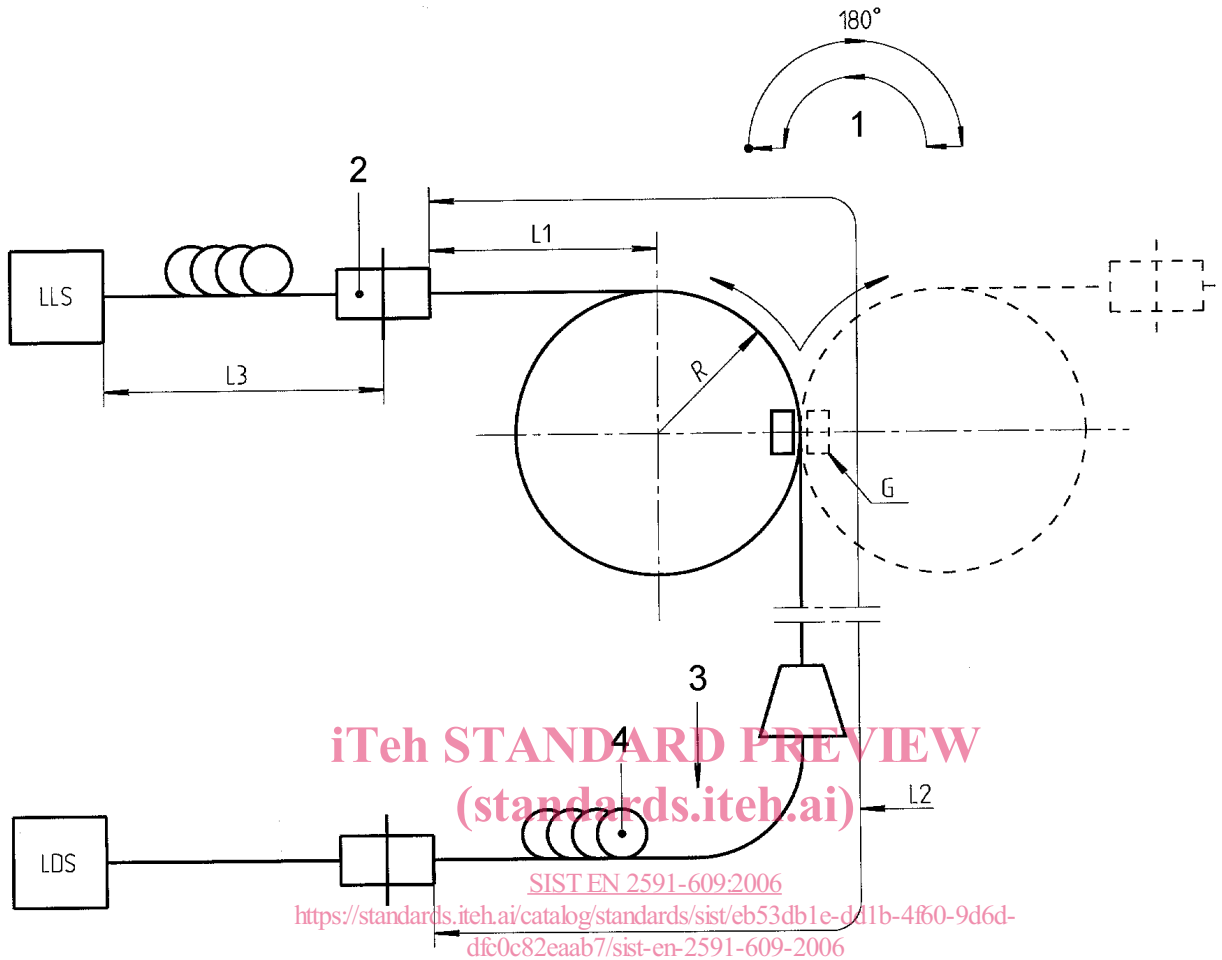
Dimension L1 shall be three times the cable diameter or cable bundle size but not less than 20 mm.

The variation of attenuation (EN 2591-602 - Method A) shall be monitored throughout the test and shall not exceed the value specified in the product standard.

5.2 Method A final measurements and requirements

EN 2591-6101: Visual examination

EN 2591-601: Insertion loss



Key

1 Cycle
2 Specimen
3 Load
4 Cable is not held under tension

L3 : shall be sufficiently long to rotate through 180°

Figure 1 — Method A

5.3 Method B procedure

The receptacle or plug shall be mounted as shown in Figure 2.

The tensile force defined by the technical specification shall be applied to the cable.

The element of connection shall be subjected to the specified number of rotations in one direction at a rate of 10 rpm to 20 rpm.

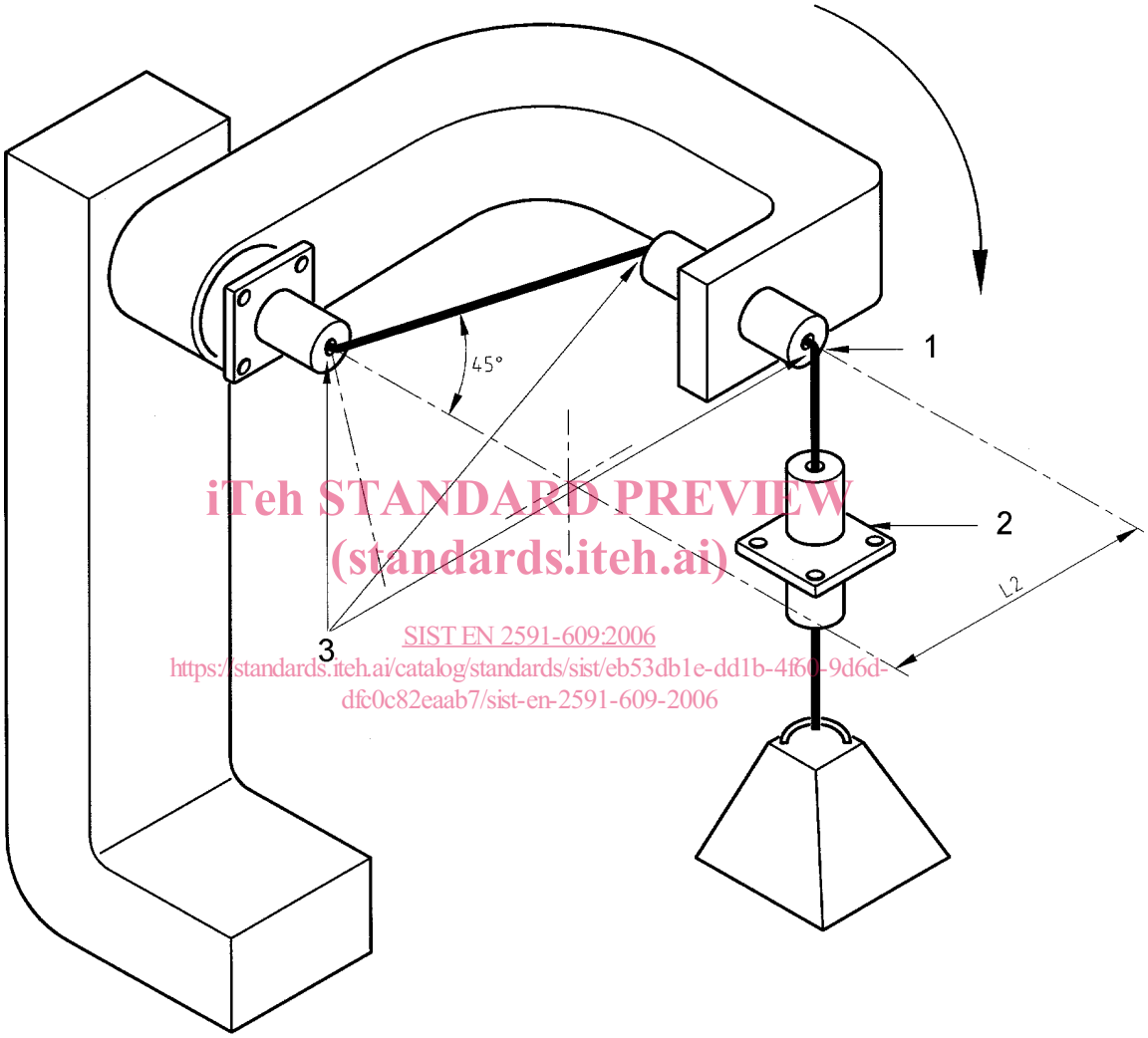
Caution: the apparatus shall be able to guarantee the minimum bend radius of the cable as specified in product standard.

5.4 Method B final measurements and requirements

During test the cable shall not become dislodged from the contact or connection.

EN 2591-6101: Visual examination

EN 2591-601: Insertion loss



Key

1 Free rotation
2 Mated connectors
3 Minimum bend radius (three places)

Figure 2 — Method B

5.5 Method C procedure

A mated pair of optical connectors shall be mounted as shown schematically in Figure 3, the pendulum length *L* as defined in the product standard. A tensile load, also defined in the product standard, is applied by means of the weight attached to the cable.