



SLOVENSKI STANDARD
SIST EN 3745-412:2006
01-julij-2006

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Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 412:
Humidity resistance

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil
412: Beständigkeit gegen Feuchtigkeit

iTeh STANDARD PREVIEW

Série aérospatiale - Fibres et câbles optiques a usage aéronautique - Méthodes d'essais
- Partie 412 : Résistance a l'humidité

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Ta slovenski standard je istoveten z: EN 3745-412:2005

ICS:

49.060

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ICS 49.060

English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test
methods - Part 412: Humidity resistance

Série aérospatiale - Fibres et câbles optiques à usage
aéronautique - Méthodes d'essais - Partie 412 : Résistance
à l'humidité

Luft- und Raumfahrt - Faseroptische Leitungen für
Luftfahrzeuge - Prüfverfahren - Teil 412: Beständigkeit
gegen Feuchtigkeit

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.

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

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Foreword

This European Standard (EN 3745-412:2005) 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.

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1 Scope

This standard specifies a method for checking the resistance optical fibre to differing levels of humidity.

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*

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3 Preparation of specimens

3.1 Specimen shall be prepared as specified in the product standard.

If not 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 3745-100.

The specimen shall be coiled with a bend radius not smaller than the specified storage radius.

3.2 Unless otherwise indicated in the technical specification the following details shall be specified:

- type of cable/fibre;
- number or length of specimen if different from (10 ± 1) mm;
- number of temperature humidity cycles, if not 56;
- specified storage radius;
- maximum residual attenuation after removal from bending test set-up.

4 Apparatus

A Light Launch System (LLS) as defined in EN 2591-100.

A Light Detector System (LDS) as defined in EN 2591-100.

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

A test chamber designed so that its temperature and relative humidity are controlled.

Condensed water from chamber walls or ceiling shall not drip on the specimens.

5 Method

5.1 Procedure

For each specimen perform the following procedure:

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

Connect the specimen to the LLS and the LDS.

Place the specimen in the test chamber.

Perform the following phases:

Phase 1: within 2 h, the temperature of the test chamber shall be uniformly raised to (65 ± 3) °C and the relative humidity increased to $(95 \pm \frac{2}{3})$ %.

Phase 2: the above conditions shall be maintained for 6 h.

Phase 3: within 16 h, the temperature shall be uniformly reduced to (38 ± 4) °C while the relative humidity is maintained as high as possible and shall not decrease below 85 %.

These three phases (see Figure 1) constitute one cycle.

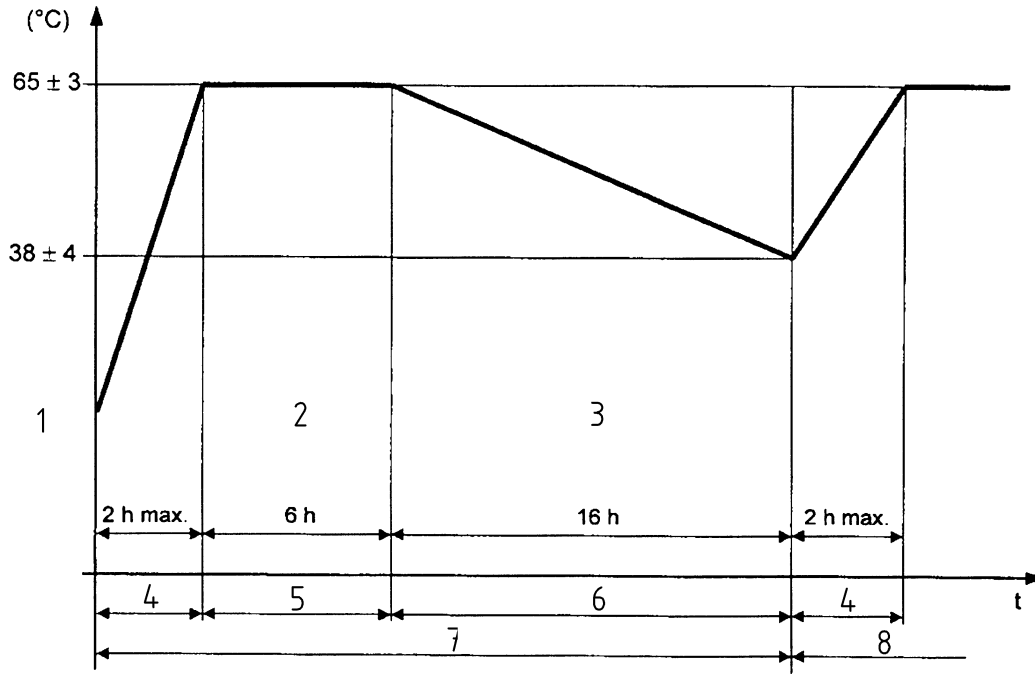
Perform the specified number of cycles.

5.2 Final measurements and requirements

After removing each specimen from the test equipment, allow the specimen to recover to standard conditions, measure the attenuation in accordance with EN 3745-301, method C.

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

The attenuation shall not exceed the specified value.



Key

- 1 Initial conditions
- 2 Relative humidity ($95 \pm \frac{2}{3}$) %
- 3 Relative humidity min. 85 %
- 4 1st phase
- 5 2nd phase
- 6 3rd phase
- 7 1st cycle
- 8 2nd cycle

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Figure 1