SLOVENSKI STANDARD
SIST EN 3745-404:2019

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Nadomešča:
SIST EN 3745-404:2006

Aeronavtika - Optična vlakna in kabli za uporabo v zračnih plovilih - Preskusne metode - 404. del: Toplotni udar

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 404: Thermal shock

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 404: Thermischer Schock

Série aérospatiale Fibres et câbles optiques à usage aéronautique Méthodes d'essais Partie 404 : Choc thermique

Ta slovenski standard je istoveten z: **EN 3745-404:2019**

ICS:

33.180.10	(Optična) vlakna in kabli	Fibres and cables
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

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EUROPEAN STANDARD

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English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 404: Part 404: Thermal shock

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 404 : Partie 404 : Choc thermique

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 404: Teil 404: Thermischer Schock

This European Standard was approved by CEN on 14 July 2019.

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

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European foreword

This document (EN 3745-404:2019) 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of an identical text or by endorsement, at the latest by March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 3745-404:2005.

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

1 Scope

This document specifies a method to determine the effects of thermal shock on an optical fibre or cable.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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*

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 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

4 Preparation of specimens

4.1 If not at standard test conditions, the specimens shall be subjected to standard test conditions and stabilised at these conditions for 24 h as defined in EN 3745-100.

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

- the number of specimens;
- the number of temperature cycles, if not four cycles;
- maximum permissible variation in attenuation;
- the upper and lower temperatures at which test is carried out;
- relative humidity during the test;
- diameter of the coil.

5 Apparatus

The test requires a suitable oven, a cold chamber capable of temperature control of ±2 °C, a Light Launch System (LLS) and Light Detector System (LDS) as defined in EN 2591-100. A device to control the relative humidity during the test may also be required.

6 Method

6.1 General

The specimen shall be coiled at all times and shall be arranged to be easily moved between the two temperature chambers. Once the sample is prepared, the attenuation reference measurement shall be taken in accordance with EN 3745-301 Method C.

The specimen shall then be subjected to the required higher temperature for a period of 30 min. The specimen shall be removed from the oven and, within 2 min, placed in the cold chamber at lower temperature for 30 min. After the final chamber, bring the specimen back to the standard test conditions. The duration shall be sufficient to allow the specimen to reach standard conditions.

6.2 Method A (discrete)

This method is used by default.

Attenuation shall be measured immediately after the cycle defined Clause 5, test in accordance with EN 3745-301, Method C.

The cycle shall be carried out four times or the number of times specified in the product standard, on the same sample.

6.3 Method B (continuous)

This method is used if required by the product standard.

Attenuation shall be measured continuously from the beginning of the cycle to the end at a rate of 1 measure per 30 s as a maximum in accordance with EN 3745-301, Method C.

The cycle shall be carried out four times or the number of times specified in the product standard, on the same sample.

6.4 Final measurements and requirements

The following shall be carried out after the test:

- EN 3745-201: Visual examination;
- Method A:
  - EN 3745-301: Attenuation, Method C, maximum change in attenuation shall be within that specified.
- Method B:
  - EN 3745-301: Attenuation, Method C, maximum change in attenuation shall be within that specified during the cycles