SLOVENSKI STANDARD

SIST EN 3745-407:2006

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Aeronavtika ï Optiļ na vlakna in kabli za uporabo v zraļ nih plovilih ï Preskusne metode ï 407. del: Gorljivost

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 407: Flammability

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 407: Nichtentflammbarkeit

Série aérospatiale - Fibres et câbles optiques a usage aéronautique - Méthodes d'essais - Partie 407 : Ininflammabilité

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English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 407: Flammability

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 407 : Ininflammabilité

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 407: Nichtentflammbarkeit

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

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

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Contents

Foreword

This European Standard (EN 3745-407:2005) 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of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

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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 to determine the resistance of an optical cable to the flame of a Bunsen burner.

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.

ISO 4046:1978, *Paper, board, pulp and related terms — Vocabulary*

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*

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.

3.2 The following details shall be specified if not already included in the technical specification:

— number and type of specimens to be tested;

— length of specimens (1 ± 0,05) m;

— flame duration.

4 Apparatus

The test requires a chamber, a pulley, a Bunsen type gas burner and tissue paper according to ISO 4046.

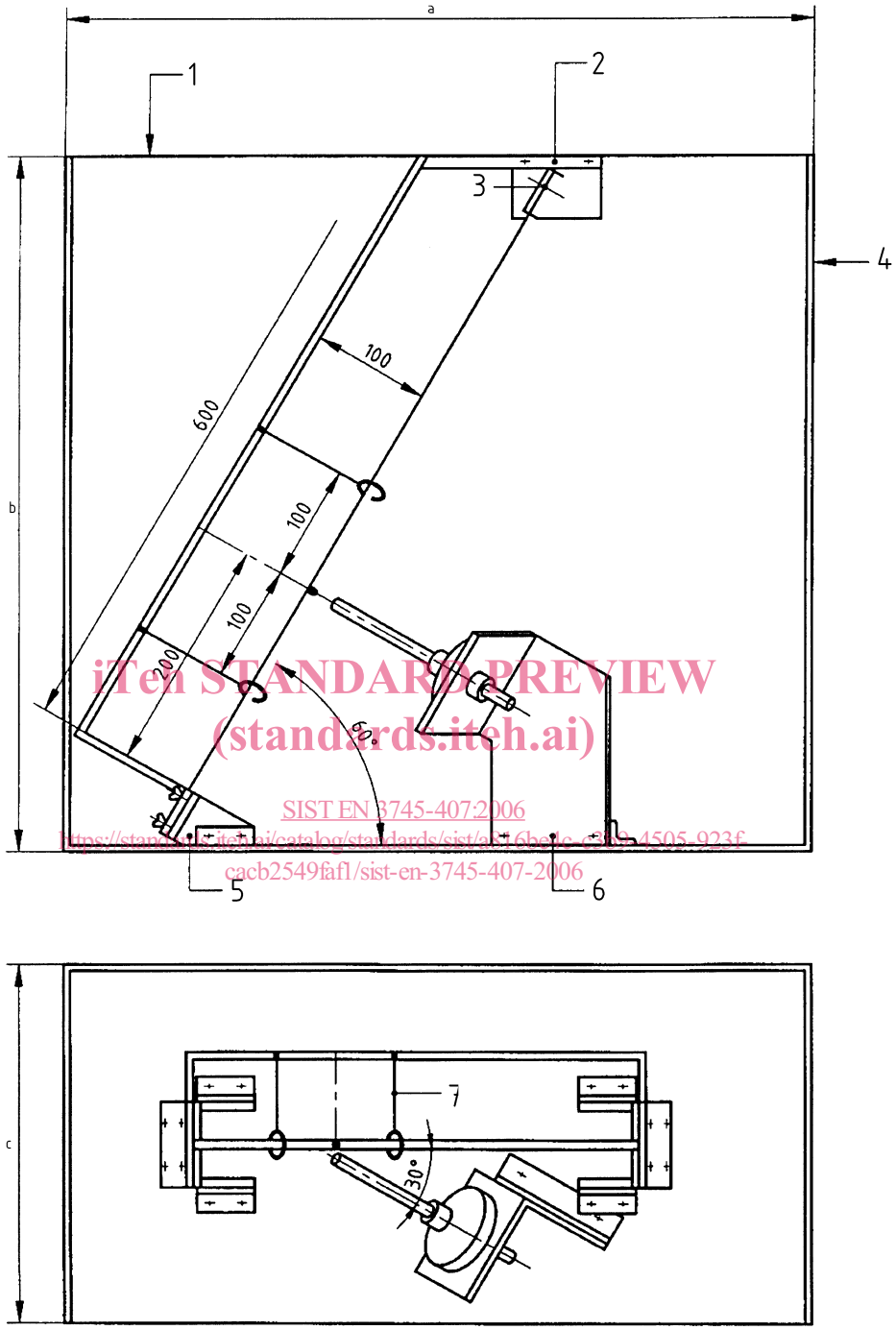
The test chamber shall be approximately (0,3 × 0,5) m by 0,6 m in height, open at top and front to provide adequate ventilation for combustion but prevent drafts.

The Bunsen type gas burner shall have a 6 mm inlet, a needle valve in the base for gas adjustment, a bore of 9,5 mm nominal, and a barrel length of approximately 100 mm above the air inlets. The burner shall be adjusted to produce a 75 mm conical flame with an inner core approximately 25 mm in length and a flame temperature not less than 955 °C at its hottest point, as measured by any appropriate system.

A typical arrangement is shown in Figure 1.

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

Dimensions in millimetres



Key

1 Box construction aluminium alloy 3,15 mm
2 Top clamp support (low thermal conductivity)
3 Upper datum point
4 Support frame open at front
5 Bottom clamp support (low thermal conductivity)
6 Bunsen burner support (low thermal conductivity)
7 Rigid wire

a 500 approx.
b 600 approx.
c 300 approx.

Figure 1

5 Method

5.1 Procedure

The specimen shall be secured at an angle of 60° to the horizontal, in a plane parallel to, and approximately 150 mm from the back of the chamber.

The specimen shall be clamped at its lower end with the test point 200 mm above the clamp point and it shall pass though the loops of the rigid wire.

The upper end shall be clamped to top clamp support. With the burner held perpendicular to the specimen and at an angle of 30° from the vertical plane of the specimen, the hottest portion of the flame shall be applied to the lower side of the cable at the test mark. The tissue paper shall be suspended taut and horizontal 240 mm below the point of flame application and at least 15 mm above the chamber floor so that any material dropping from the specimen shall fail upon the tissue.

The period of flame application shall be 30 s and the flame shall be withdrawn immediately at the end of that period.

5.2 Final measurements and requirements

— EN 3745-201: Visual examination

The distance burnt shall not exceed 75 mm. The time before the extinction of the test flame shall not exceed the specified value. No flaming particles shall fall from the specimen during the test and the tissue paper shall not be ignited.

Holes or charred spots in the tissue shall be ignored in the absence of actual flame.

Breaking of the specimen shall not be considered as failure provided the burnt length, the flame duration and consequences of the outflow of flaming materials or particles satisfy the specified requirements.