



SLOVENSKI STANDARD

SIST EN 3745-506:2019

01-februar-2019

Nadomešča:

SIST EN 3745-506:2009

Aeronavtika - Optična vlakna in kabli za uporabo v zračnih plovilih - Preskusne metode - 506. del: Odpornost proti udarcu

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 506: Impact resistance

Luft- und Raumfahrt - Elektrischen Leitungen für Luftfahrt Verwendung - Prüfverfahren - Teil 506: Schlagfestigkeit

Série aérospatiale - Câbles électriques à usage aéronautique - Méthodes d'essais - Partie 506: Résistance à l'impact

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Ta slovenski standard je istoveten z: EN 3745-506:2018

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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en,fr,de

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EUROPEAN STANDARD

EN 3745-506

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2018

ICS 49.060; 49.090

Supersedes EN 3745-506:2009

English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 506: Impact resistance

Série aérospatiale - Fibres et câbles optiques à usage
aéronautique - Méthodes d'essais - Partie 506 :
Résistance à l'impact

Luft- und Raumfahrt - Faseroptische Leitungen für
Luftfahrzeuge - Prüfverfahren - Teil 506:
Schlagfestigkeit

This European Standard was approved by CEN on 26 February 2018.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 3745-506:2018) 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 document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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.

This document supersedes EN 3745-506:2009.

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

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EN 3745-506:2018 (E)**1 Scope**

This document specifies a method to determine the ability of an optical fibre or cable to withstand impact under specified environmental conditions.

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 Preparation of specimens

Fibres coated by UV-curable acrylic resin can be cleaned (e.g. from cable filling compounds), without causing damage to the coating using any cleaning agent recommended by the manufacturer of the fibres. However the use of chlorine-based cleaning agents should be absolutely avoided, since they can attack the coating even after their use and in vapour phase.

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. Attenuation should be measured, in accordance with EN 3745-301 method C, before the test.

Unless otherwise specified in the product standard, the following details shall be as stated in the technical specification:

- a) the temperature at which test is carried out if other than standard;
- b) the number and length of specimens;
- c) the mass of the weight and the drop height, or alternatively the impact energy;
- d) the radius R of the striking face;
- e) the number of impacts;
- f) the permissible change in attenuation after the test;
- g) location of impacts on the sample (if not at the same location).

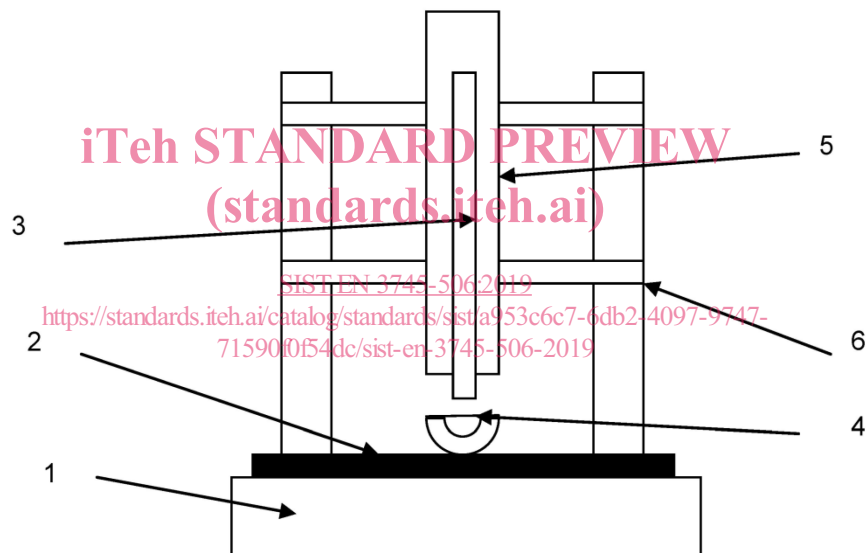
4 Apparatus

The test fixture shall allow the transmission of the impact load onto the cable sample which is fixed to a steel baseplate. The test fixtures detailed in Figures 1 and 2 shall be used for single or low numbers of impact testing. Apply a load vertically to the striking face to transmit the impact force onto the cable sample, as shown in Figure 1. The striking face can be fixed directly to the weight as shown in Figure 2. The impact is applied to the cable sample through a striking face with a specific radius 'R' as defined in the product standard.

Where more than five (5) impacts are required the test fixture shown in Figure 3 can be used. The rotary actuator shall be used to raise the freely suspended weight and striking face only. In both cases, other equivalent apparatus may also be used.

The apparatus shall comprise:

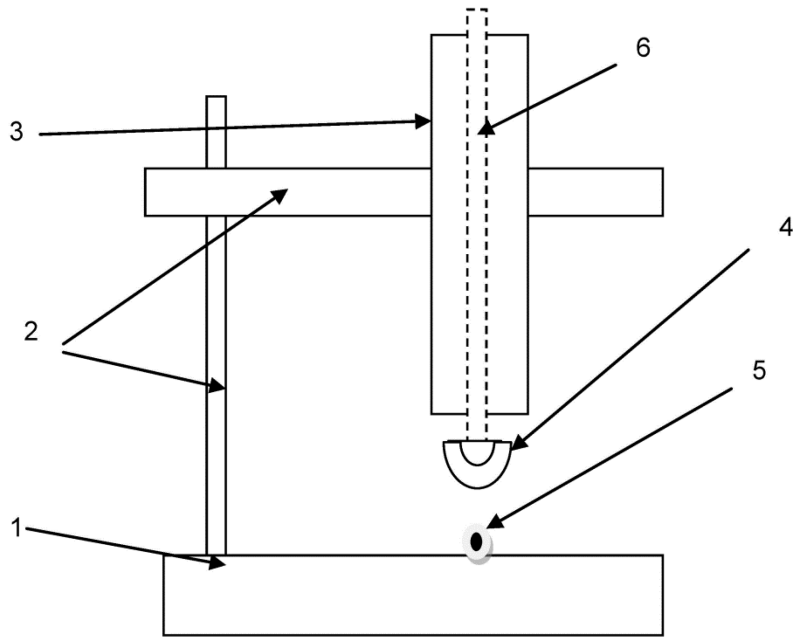
- a) a Light Launch System (LLS) and Light Detector System (LDS) as defined in EN 2591-100;
- b) impact test apparatus as defined:



Key

- 1 Steel plate
- 2 Cable sample
- 3 Weight (hammer)
- 4 Striking face
- 5 Guide (tube or hole in the frame)
- 6 Frame

Figure 1 — Test fixture for limited number of drops

**Key**

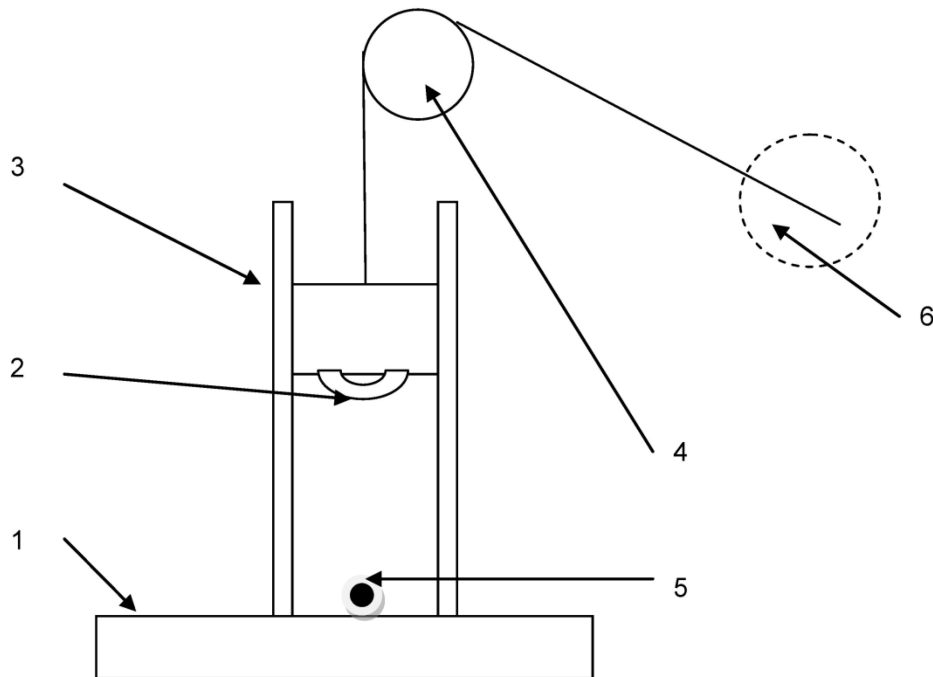
- 1 Steel plate
- 2 Chinning bar
- 3 Guide (tube)
- 4 Striking face
- 5 Cable sample
- 6 Weight (hammer)

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Figure 2 — Alternative test fixture for limited number of drops

**Key**

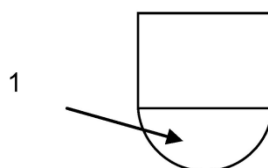
- 1 Steel plate
- 2 Striking face
- 3 Guide (tube for example)
- 4 Pulley
- 5 Cable sample
- 6 Weight (hammer)

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Figure 3 — Test fixture for multiple drops

**Key**

- 1 Radius R

Figure 4 — Striking face

The impact test apparatus shall permit a weight to drop vertically onto a striking face which transmits the impact to the cable sample or directly on the cable sample through, the striking face fixed to the weight (hammer). The sample shall be fixed to a flat substantial steel base.