SLOVENSKI STANDARD
SIST EN 3745-505:2018

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Nadomešča:
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Aeronavtika - Optična vlakna in kabli za uporabo v zračnih plovilih - Preskusne metode - 505. del: Natezna trdnost kablov

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 505: Cable tensile strength

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 505: Zugfestigkeit

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 505: Tenue en traction

Ta slovenski standard je istoveten z: **EN 3745-505:2018**

ICS:

33.180.10	(Optična) vlakna in kabli	Fibres and cables
49.090	Oprema in instrumenti v zračnih in vesoljskih plovilih	On-board equipment and instruments

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EUROPEAN STANDARD

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English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 505: Cable tensile strength

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 505: Tenue en traction

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 505: Zugfestigkeit

This European Standard was approved by CEN on 27 November 2017.

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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.

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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 3745-505:2018) 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 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 January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

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.

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1 Scope

This European Standard specifies a method for measuring the tensile properties of a fibre optic cable.

It shall be used together with EN 3745-100.

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 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*

EN 60794 (all parts), *Optical fibre cables*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

4 Preparation of specimens

Prepare test sample in accordance with EN 60794, Method E1.

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.

Sample length can be more than 100 m for test A and 5 m for test B.

5 Apparatus

The apparatus shall comprise:

- Fibre and cable attenuation test apparatus as defined in EN 3745-301;
- Tensile test apparatus in accordance with EN 60794, Method E1 (for test A);
- Tensile test apparatus capable of measuring the specified elongation to an accuracy of 1 % (for test B).

6 Method

6.1 General

For measuring cable tensile strength method A or B can be used.

Unless otherwise stated, the test conditions shall be standard atmospheric conditions.

6.2 Method A (using transfer device and chuck drum)

The test shall be carried out in accordance with EN 60794, Method E1.

6.3 Method B (using clamping device)

The cable shall be pulled between two mandrels.

The initial length of the test specimen between the mandrels (min 50 mm diameter) shall be (250 ± 1) mm.

The pulling speed shall be (50 ± 10) mm/min.

The cable shall be wrapped at least three (3) turns on each mandrel.

NOTE There must be sufficient grip between the test specimen and mandrel to avoid relative movement between cable and mandrel during test.

6.4 Final measurements and requirements

If specified the value for the following shall conform to those given in the product standard (see Table 1):

Table 1

Object	Test method
Aspect	
Visual examination as defined in EN 3745-201	A and B
Attenuation	
Maximum recorded fibre strain at maximum tensile rating	A
Maximum attenuation change at maximum tensile rating	A and B
Maximum attenuation change before and after test (without load)	A and B
Mechanical characteristics	
Maximum load up to optical discontinuity	A and B
Breaking load for the complete cable	A and B