SLOVENSKI STANDARD
SIST EN 3745-517:2017

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Nadomešča:
SIST EN 3745-517:2012

Aeronavtika - Optična vlakna in kabli za uporabo v zračnih plovilih - Preskusne metode - 517. del: Preskus zategljivosti kabelskih vezic

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 517: Cable tie clamping test

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 517: Klemmprüfung mit Kabelbindern

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 517: Essai de serrage par colliers de frettage

Ta slovenski standard je istoveten z: **EN 3745-517:2017**

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

SIST EN 3745-517:2017 **en,fr,de**

EUROPEAN STANDARD

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EN 3745-517

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ICS 49.090

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English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 517: Cable tie clamping test

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 517: Essai de serrage par colliers de frettage

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 517: Klemmprüfung mit Kabelbindern

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 3745-517:2017) 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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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This document supersedes EN 3745-517:2012.

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1 Scope

This European Standard specifies a method of determining the attenuation variation of an optical cable when clamped to a mandrel with cable ties, simulating the condition in an installed harness.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 3745-201, *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 4056-003, *Aerospace series — Cable ties for harnesses — Part 003: Plastic cable ties, operating temperatures – 65 °C to 105 °C and – 65 °C to 150 °C — Product standard*

3 Preparation of specimens

3.1 The fibre ends shall conform to the fibre end preparation criteria specified in EN 2591-100.

3.2 The length of fibre to be tested shall be in accordance with the applicable product standard.

3.3 The specimens shall be subjected to standard test conditions and stabilized at these conditions for 24 h as defined in EN 2591-100.

3.4 The following details shall be specified if not already included in the product standard.

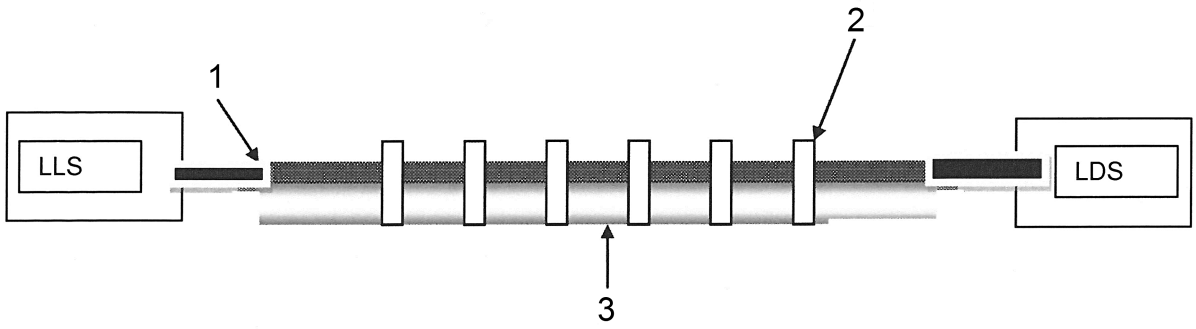
— Minimum number of cable ties, 6.
— Spacing between the cable ties shall be defined. If not the distance shall be 150 mm.
— Setting of the cable tie fitting tool.
— Mandrel diameter.
— Number of specimens (minimum 3)

The wavelengths to be measured if not 1300 nm and 850 nm.

4 Apparatus

— A Light Launch System (LLS) and Light Detection System (LDS) as defined in EN 2591-100.
— A mandrel with a diameter specified in the applicable product standard.

A typical arrangement is shown in Figure 1.



Key

1 Fibre optic cable
2 Cable tie
3 Mandrel

Figure 1

Cross sectional view

Key

1 Mandrel
2 Fibre optic cable
3 Head of cable tie shall be positioned on the mandrel

Figure 2

5 Method

5.1 Procedure

a) Measure and record the optical transmittance of the specimen for both wavelengths 850 nm and 1300 nm while the specimen is aligned on the test mandrel to establish a reference measurement.

b) Apply the specified number of cable tie type EN 4056-003 type 1, size code S or equivalent to the cable sample under test and mandrel, as shown in Figure 2. The cable ties are to be positioned at distance specified in the product standard or at 150 mm if not specified.

c) Using the applicable fitting tool specified in MS 90387 for the size of cable tie being used, tighten the cable tie to the required tension as detailed in the product standard. The head of the cable tie shall be located according to Figure 2.

d) Leave the assembly to stand for 15 minutes (to allow the cable tie to relax) then measure and record the final optical transmittance of the specimen at both wavelengths 850 nm and 1300 nm.

e) After completing section d), remove the cable ties and measure the final optical transmittance of the specimen at both wavelengths 850 nm and 1300 nm when the specimen is removed from the test fixture.

5.2 Final measurements and requirements

Measure the initial and residual attenuation variation using EN 3745-301, method C. Starting with a reference measurement before setting up the test assembly. After the period of test remove the specimen from the test fixture and take a second measurement within one minute. Take a final reading after 1 h to determine residual attenuation, if any.

Perform a visual examination according to EN 3745-201.