SLOVENSKI STANDARD
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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 für Kabelbinder

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

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49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

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Foreword

This document (EN 3745-517:2012) 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of an identical text or by endorsement, at the latest by January 2013, and conflicting national standards shall be withdrawn at the latest by January 2013.

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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 3745-100, A*erospace 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 4056-001, *Aerospace series — Cable ties for harnesses — Part 001: Technical specification*

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.

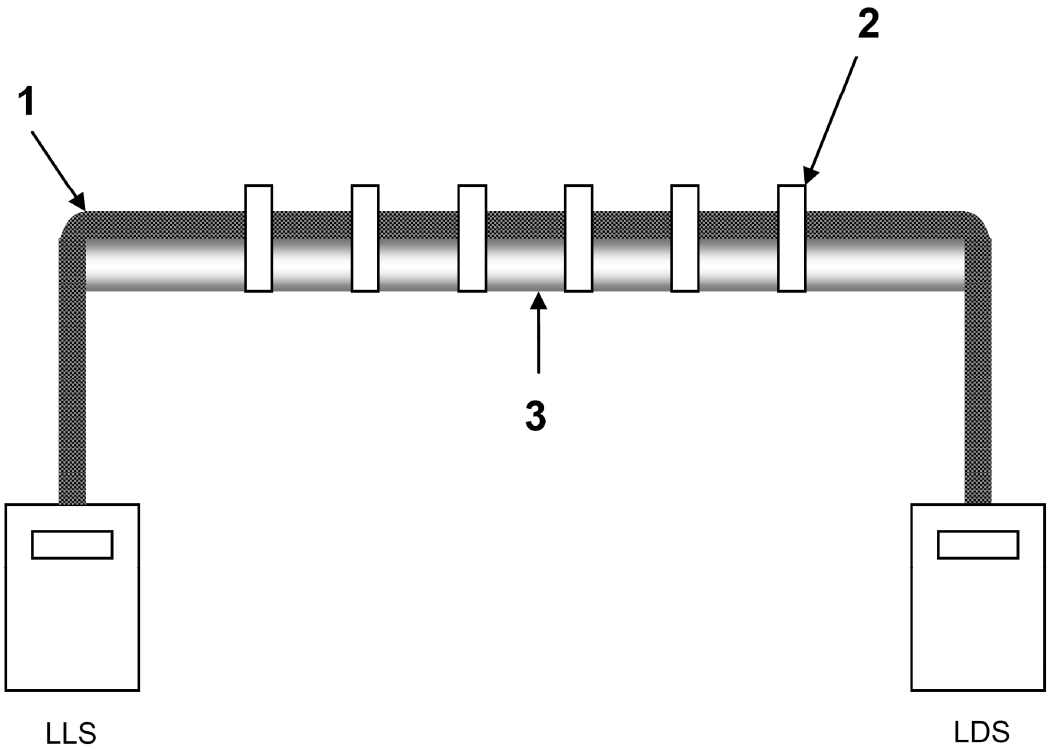
3.3 The specimens shall be subjected to standard test conditions and stabilized at these conditions for 24 h as defined in EN 2591-100.

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 Nylon straps
3 Mandrel

Figure 1

5 Method

5.1 Procedure

a) Measure and record the optical transmittance of the specimen for both wavelengths 850 nm and 1 300 nm while the specimen is mounted on the test mandrel to establish a reference measurement.

b) Install the specified number of miniature self clinching nylon straps over the cable and mandrel at a separation distance specified in the applicable product standard.

c) Using the hand tool specified in EN 4056-001, tighten the straps to the tension value specified by the applicable product standard.

d) After tightening the nylon straps, measure and record the final optical transmittance of the specimen at both wavelengths 850 nm and 1 300 nm.

5.2 Final measurements and requirements

Measure the residual attenuation variation (EN 3745-301, method C) after removing the specimen from the test fixture to ensure no fibber breakage.

Perform a visual examination according to EN 3745-201.