SLOVENSKI STANDARD
SIST EN 3745-411:2019

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Nadomešča:
SIST EN 3745-411:2007

Aeronavtika - Optična vlakna in kabli za uporabo v zračnih plovilih - Preskusne metode - 411. del: Odpornost proti tekočinam

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 411: Resistance to fluids

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 411: Beständigkeit gegen Flüssigkeiten

Série aérospatiale - Fibres et câbles optiques à usage aéronautique - Méthodes d'essais - Partie 411 : Résistance aux fluides

Ta slovenski standard je istoveten z: **EN 3745-411:2018**

ICS:

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

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EUROPEAN STANDARD

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English Version

Aerospace series - Fibres and cables, optical, aircraft use - Test methods - Part 411: Resistance to fluids

Série aérospatiale - Câbles et fibres optiques à usage aéronautique - Méthodes d'essais - Partie 411 : Résistance aux fluides

Luft- und Raumfahrt - Faseroptische Leitungen für Luftfahrzeuge - Prüfverfahren - Teil 411: Beständigkeit gegen Flüssigkeiten

This European Standard was approved by CEN on 2 March 2018.

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

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European foreword

This document (EN 3745-411:2018) 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of an identical text or by endorsement, at the latest by May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.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 shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 3745-411:2007.

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1 Scope

This European Standard specifies two methods of determining the fluid resistance of a cable.

It shall be used together with EN 3745-100 and EN 3909.

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 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 3745-203, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 203: Cable dimensions*

EN 3745-503, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 503: Scrape abrasion*

EN 3909, *Aerospace series — Test fluids and test methods for electrical and optical components and sub-assemblies*

3 Test fluids

Unless otherwise specified in the product standard, all fluids listed in Table 1 are mandatory and are taken from EN 3909.

4 Cleaning

4.1 Initial cleaning

Unless otherwise specified in the product standard, the test sample shall be thoroughly cleaned to remove unrepresentative coatings i.e. preservatives, grease or contaminants.

When a separate sample is specified for each fluid, only initial cleaning applies.

4.2 Intermediate cleaning

If sequential testing is required, the product standard shall specify any necessary cleaning method.

When more than one fluid is to be applied to a test sample, the following should be considered:

— The need to assess the effect of individual fluids;

— The possibility of synergistic effects from applying successive fluids;

— If the order of exposure to fluids in service life is known, or if the exposure to fluids recognized as having synergistic effects is known and is possible in service life, then this order should be specified;

— Whether the test sample should be cleaned between or after the test.

NOTE Choice of cleaning fluid shall clearly not result in further contamination. Some of the specified fluids may be used as a cleaning fluid (e.g. aviation fuel, solvents, cleaning fluids) otherwise a fluid known to be used in normal cleaning procedures should be used.

5 Preparation of test specimens

5.1 General

Unless specified in the product standard separate test samples are to be used for each fluid, they shall be cleaned in accordance with 4.1.

All samples shall be visually inspected and there condition recorded.

5.2 Cables

For each fluid to be tested, take a specimen at least 1 m in length from the finished cable.

Measure the specimen diameter in accordance with EN 3745-203.

Unless otherwise stated in the product standard, each specimen shall be mechanically maintained and wound seven complete turns onto a mandrel of diameter 12 times the maximum outer diameter of the specimen without torsion, but with sufficient tension to ensure the specimen remains fully in contact with the mandrel.

Remove the mandrel.

6 Procedures

There are two test procedures, depending upon the components intended application.

6.1 Test method 1: occasional contamination

This method is intended to test materials and components which intended to be used in applications were contamination is accidental and occasional.

6.1.1 Mount the test sample in its normal operating configuration and maintain at room temperature, or as specified in the product standard.

6.1.2 Dip or spray the test sample with the specified fluid which shall be maintained at the test temperature given in Table 1, or as specified in the product standard. Ensure that the entire surface of the sample is thoroughly wetted. Allow the sample to drain naturally for the time specified; **shaking or wiping is not permitted**.

6.1.3 Transfer the test sample to a test chamber and maintain at the test temperature for the time specified in the product standard. If not specified, and if method 1 is used the parameters shall be as specified in Table 1 (column temperature °C minimum).

6.1.4 Allow the test sample to return to room temperature, and remain at room temperature for between 1 h and 2 h, visually examine the specimen.

6.1.5 Repeat this procedure for the number of cycles specified in Table 1.

6.1.6 At the end of the test carry out the final examination and conduct any additional tests required by the product standard.

6.2 Test method 2: extended contamination

This method is intended to test materials and components such as cables which are intended to be used in applications were contamination is accidental but likely to be prolonged.

NOTE In order to assess components which are intended to be routinely immersed in fluid then this method should be used with extended test exposures.

6.2.1 Immerse the test sample fully in the specified test fluid which shall be maintained at the temperature as given in Table 1 and the duration shall be a minimum of (24 ± 1) h.

6.2.2 Transfer the test sample to a test chamber and maintain at the test temperature and for the time specified in the product standard. If not specified, the parameters shall be (65 ± 2) °C for (160 - 0 + 8) h.

6.2.3 At the end of the period allow the test sample to cool to room temperature, and remain at room temperature for between 1 h and 2 h, before being subjected to final examination.

7 Final examination

7.1 General

Examine the test sample visually and record any change of condition from the initial examination.

The test samples may be cleaned in accordance with 4.3 in order to aid this examination.

The product standard shall specify any measurements or tests required.

7.2 Cables

After being returned to ambient temperature and without cleaning, examine the test sample visually, according to EN 3745-201 and record any change of condition from the initial examination.

Straighten or uncoil the coiled part of the cable.

The contaminated specimen shall be subjected to the scrape abrasion test, according to EN 3745-503 as defined in the product standard for ambient temperature.

8 Requirements

Samples shall satisfy the requirements of the product standard unless specified:

— Component markings shall still be visible;

— Cables insulation shall not have cracked or crazed;

— Cables diameter shall not have swollen more than 10 %.