SLOVENSKI STANDARD
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SIST EN 3475-506:2004

Aeronavtika - Elektriļ ni kabli za uporabo v zraļ nih plovilih - Preskusne metode - 506. del: Enakomernost prevleke

Aerospace series - Cables, electrical, aircraft use - Test methods - Part 506: Plating continuity

Luft- und Raumfahrt - Elektrische Leitungen für Luftfahrtverwendung - Prüfverfahren - Teil 506: Gleichmaßigkeit des Überzugs

Série aérospatiale - Câbles électriques a usage aéronautique - Méthodes d'essais - Partie 506 : Continuité du revetement

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49.060	Letalska in vesoljska elektriļ na oprema in sistemi	Aerospace electric equipment and systems

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English Version

Aerospace series - Cables, electrical, aircraft use - Test methods - Part 506: Plating continuity

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This European Standard was approved by CEN on 21 June 2007.

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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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 3475-506:2007) 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of an identical text or by endorsement, at the latest by February 2008, and conflicting national standards shall be withdrawn at the latest by February 2008.

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 3475-506:2002.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies a method of verifying the continuity of plating on strands which are:

— either checked before stranding or screening, or

— checked after stranding or screening

It shall be used together with EN 3475-100.

2 Normative references

The following referenced documents are indispensable for the application 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 3475-100, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General.*

ASTM B 33-81, *Standard specification for tinned soft or annealed copper wire for electrical purposes.* [1)]

ASTM B 298-99, *Standard specification for silver-coated soft or annealed copper wire.* [1)]

ASTM B 355-95, *Standard specification for nickel-coated soft or annealed copper wire.* [1)]

3 Preparation of specimens

3.1 General

The ASTM B 33 or ASTM B 298 or ASTM B 355 plating continuity test method applies to single end wires taken before stranding or before screening.

Thus the applicability of the polysulfide test is restricted by the ASTM in recognition of the abrasion to the wire inherent in the stranding or in the screening process.

3.2 Strands before stranding or screening

3.2.1 Copper strands

Prepare three strands at least 150 mm long as specimens and carefully straighten them by hand.

Degrease the strands without damaging them and wipe them with a clean dry cloth. After cleaning, the strands shall not be touched with bare fingers.

The length of the specimen which is immersed shall be at least 110 mm.

3.2.2 Copper-clad aluminum strands

Prepare three strands at least 150 mm long as specimens.

Degrease the strands without damaging them and wipe them with a clean dry cloth. After cleaning, the strands shall not be touched with bare fingers.

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1) Published by: American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, USA.

By using gloves, wind five turns of each strand on a mandrel which the diameter is about 12 times the strand diameter.

NOTE Due to hardness differences between, aluminium, copper and coating (particularly nickel) materials and possible associated drawbacks during strand drawings after plating, turns are necessary to reveal possible weakness.

3.3 Strands after stranding or screening

3.3.1 General

Due to the above restriction by the ASTM in recognition of the abrasion to the wire inherent in the stranding or in the screening process, the following preparation of specimens apply when testing stranded or screened product:

1) Unilay or Concentric constructions to be tested as the whole conductor.
2) Two members from each layer of rope constructions to be tested after they have been carefully removed from the finished rope.
3) Screen to be tested as whole conductor after it has been carefully separated from cable jacket and from inner core(s).

3.3.2 Copper conductors or copper screens

Prepare three samples at least 150 mm long as specimens.

Degrease the specimens without damaging them and wipe them with a clean dry cloth. After cleaning, the specimens shall not be touched with bare fingers.

The length of the specimen which is immersed shall be at least 110 mm.

3.3.3 Copper-clad aluminum conductors

Prepare three samples at least 150 mm long as specimens.

Degrease the specimens without damaging them and wipe them with a clean dry cloth. After cleaning, the specimens shall not be touched with bare fingers.

By using gloves, wind five turns of each conductor on a mandrel which diameter is about 12 times the conductor diameter.

4 Method

Place the specimens for 30 s in a sodium polysulphide solution which has a density of 1,142 g/cm^3 at 20 °C, then wash them carefully in distilled water.

In addition, for silver plating, the samples shall then be immersed for 15 s in a solution of hydrochloric acid which has a density of 1,088 g/cm^3 at 20 °C.

The specimens shall then be washed carefully again in distilled water.

5 Requirements

Examination shall occur immediately after the solution cycle.

There shall be no adherent or distinctly visible black spots when examined with the naked eye.

Any blackening occurring less than 15 mm from each end shall be disregarded.