SIST

SLOVENSKI STANDARD
SIST EN 4608-005:2012

01-maj-2012

Aeronavtika - Električni ognjevzdržni kabli - Enožilni in posukani večžilni kabli, zaslonjeni (opleteni) in oplaščeni - Delovne temperature med -65 °C in 260 °C - 005. del: Družina DW - Lahki, dvožilni, kaliber AWG 24, za prenos podatkov - Možnost UV-laserskega tiskanja - Standard za izdelek

Aerospace series - Cable, electrical, fire resistant - Single and twisted multicore assembly, screened (braided) and jacketed - Operating temperatures between - 65 °C and 260 °C - Part 005: DW family - lightweight two-core gauge 24 for data transmission - UV laser printable - Product standard

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Luft- und Raumfahrt - Feuerberständige elecktrische Leitungen - Einzel- und mehradrig verdrillte Leitungen, geschirmt (Geflecht) und ummantelt - Betriebstemperaturen zwischen - 65 °C und 260 °C - Teil 005: DW-Familie - leichte Bauweise, zwei AWG 24 für Datenübertragung - UV Laser bedruckbar - Produktnorm

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Série aérospatiale - Câbles électriques blindés résistant au feu - Simple et multifilaire blindé (tresse) gainé - Températures de fonctionnement comprises entre - 65 °C et 260 °C - Partie 005 : Famille DW - fil allégé, bifilaire gauge 24 pour transmission de données - marquable laser UV - Norme de produit

Ta slovenski standard je istoveten z: **EN 4608-005:2012**

ICS:

13.220.99	Drugi standardi v zvezi z varstvom pred požarom	Other standards related to protection against fire
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

SIST EN 4608-005:2012 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4608-005

February 2012

ICS 49.060

English Version

Aerospace series - Cable, electrical, fire resistant - Single and twisted multicore assembly, screened (braided) and jacketed - Operating temperatures between -65 °C and 260 °C - Part 005: DW family - Lightweight two-core gauge 24 for data transmission - UV laser printable - Product standard

Série aérospatiale - Câbles électriques blindés résistant au feu - Simple et multifilaire blindé (tressé) et gainé - Températures de fonctionnement comprises entre - 65 °C et 260 °C - Partie 005: Famille DW - Fil allégé bifilaire gauge 24 pour transmission de donnée - Marquable laser UV - Norme de produit

Luft- und Raumfahrt - Feuerbeständige elektrische Leitungen - Einzel- und mehradrig verdrillte Leitungen, geschirmt (Geflecht) und ummantelt - Betriebstemperaturen zwischen -65 °C und 260 °C - Teil 005: DW-Familie, leichte Bauweise, zweiadrig, Drahtdurchmessergröße 24, für Datenübertragung, UV-Laser bedruckbar - Produktnorm

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 4608-005:2012) 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 August 2012, and conflicting national standards shall be withdrawn at the latest by August 2012.

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SIST EN 4608-005:2012

1 Scope

This European Standard specifies the characteristics of gauge 24 two-core lightweight fire proof, screened, electrical cables for data transmission systems of aircraft at operating temperature between – 65 °C and 260 °C.

These cables are UV Laser printable in accordance with EN 3838.

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 2083, *Aerospace series — Copper and copper alloys conductors for electrical cables — Product standard*

EN 2346-005, *Aerospace series — Cable, electrical, fire resistant — Operating temperatures between* – *65 °C and 260 °C — Part 005: DW family, single UV laser printable and multicore assembly — Light weight — Product standard* [1]

EN 3475 [2], *Aerospace series — Cables, electrical, aircraft use — Test methods*

EN 3475-100, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General*

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EN 4608-001, *Aerospace series — Cable, electrical, fire resistant — Single and twisted multicore assembly, screened (braided) and jacketed — Operating temperatures between* – *65 °C and 260 °C — Part 001: Technical specification*

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EN 4608-002, *Aerospace series — Cable, electrical, fire resistant — Single and twisted multicore assembly, screened (braided) and jacketed — Operating temperatures between* – *65 °C and 260 °C — Part 002: General*

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts*

3 Terms and definitions

For the purposes of this document, the following terms and definitions given in EN 3475-100 apply.

[1] Published as ASD STAN Prestandard at the date of publication of this standard.

[2] All parts quoted in Tables 2 and 3.

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4 Materials and construction

4.1 Materials

These cables shall consist of the following:

— Cores according to EN 2346-005

— Number of cores: 2

2 cores shall be twisted together according to EN 4608-001.

Screen:

— Nickel plated copper braid

— See Table 1 for strand diameter

— Material according to EN 2083, tests according to EN 3475-100

— Construction according to EN 4608-001.

Outer jacket:

— Sintered wrapped PTFE UV laser printable

4.2 Construction

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Table 1

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No of core	Code No	Nominal cross section mm^2	AWG[a]	Number of strands	Nominal diameter of strands mm	Conductive resistance at 20 °C max. Ohm/km	Nominal diameter of shield strands mm	Shield diameter max. mm	External diameter max. mm	Mass max. g/m	Number of missing strands
2	002	0,25	24	19	0,12	135,00	0,12	3,5	4,00	27,5	0

[a] Closest American Wire Gauge

4.3 Colour code

See EN 4608-002.

5 Required characteristics

See EN 4608-001 and Table 2.

— Operating temperature: 260 °C max. continuous.

— Operating voltage: 600 V AC.

— Use frequency: 125 kHz maximum.

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6 Tests

See Table 2.

Table 2

EN 3475-Test No	Title	Details
201	Visual examination	Applicable.
202	Mass	Applicable Table 1.
203	Dimensions	Applicable Table 1.
301	Ohmic resistance per unit length	Applicable Table 1.
302	Voltage proof test – Immersion test	Applicable.
302	Voltage proof test – Dry test	Applicable.
303	Insulation resistance	Applicable.
304	Surface resistance	Applicable.
305	Overload resistance	Not applicable.
306	Continuity of conductors	Applicable.
401	Accelerated ageing	Applicable. Temperature: (310 ± 5) °C.
402	Shrinkage and delamination	Applicable. Temperature: (310 ± 5) °C. Maximum shrinkage: 1,5 mm.
403	Delamination and blocking	Applicable. Temperature: (310 ± 5) °C.
404	Thermal shock	Applicable. Temperature 260 °C. Maximum shrinkage: 1,5 mm.
405	Bending at ambient temperature	Applicable.
406	Cold bend test	Applicable. Temperature: (– 65 ± 2) °C.
407	Flammability – Method 1	Applicable. Extinction time: 3 s.
408	Fire resistance	Applicable. 15 min. Insulation resistance: 10 000 ohms. Load: 170 g for 002.
409	Air-excluded ageing	Not applicable.
410	Thermal endurance	Not applicable.
411	Resistance to fluids	Applicable.
412	Humidity resistance	Not applicable.
413	Wrap back test	Not applicable.

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Table 2 *(continued)*

EN 3475-Test No	Title	Details
414	Differential scanning calorimeter (DSC test)	Not applicable.
415	Rapid change of temperature	Not applicable.
416	Thermal stability	Not applicable.
417	Fire resistance of cable inside harness	Not applicable.
501	Dynamic cut-through	Applicable. Temperature 260 °C, 1 hour. See Table 3.
502	Notch propagation	Applicable. Depth notch: 0,10 mm.
503	Scrape abrasion	Applicable. See Table 3.
504	Torsion	Not applicable.
505	Tensile test on conductors and strands	Applicable.
506	Plating continuity	Applicable.
507	Adherence of plating	Applicable.
508	Plating thickness	Applicable.
509	Solderability	Not applicable.
510	Tensile strength and elongation of extruded insulation, sheath and jacket material	Not applicable.
511	Cable-to-cable abrasion	Not applicable.
512	Flexure endurance	Not applicable.
513	Deformation resistance (Installation with plastic cable ties)	Not applicable.
601	Smoke density	Not applicable.
602	Toxicity	Not applicable.
603	Resistance to wet arc tracking	Not applicable.
604	Resistance to dry arc propagation	Not applicable.
605	Wet short circuit test	Not applicable.
701	Strippability and adherence of insulation to the conductor	Strippability: applicable. Adherence: not applicable.
702	Screen pushback capability	Applicable.
703	Permanence of manufacturer's marking	Applicable.
704	Flexibility	Not applicable.
705	Contrast measurement	Applicable ≥ 50 %.
706	Laser markability	Applicable.

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