SLOVENSKI STANDARD
oSIST prEN 3375-008:2022

01-september-2022

Aeronavtika - Električni kabli za digitalni prenos podatkov - 008. del: Enojni oplet - Štirižilni zvezdasti kabel, 100 ohmov (Quad cable) - Tip KD - Standard za proizvod

Aerospace series - Cable, electrical, for digital data transmission - Part 008: Single braid - Star Quad 100 Ohms - Type KD - Product standard

Luft- und Raumfahrt - Elektrische Leitungen für Digitaldatenübertragungen - Teil 008: Einfach geschirmt - Quad 100 Ohm - Typ KD - Produktnorm

Série aérospatiale - Câbles électriques pour transmission de données numériques - Partie 008 : Simple tresse - Quarte en étoile 100 ohms - Type KD - Norme de produit

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Ta slovenski standard je istoveten z: **prEN 3375-008**

ICS:

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

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

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 3375-008

June 2022

ICS 49.060

Will supersede EN 3375-008:2009

English Version

Aerospace series - Cable, electrical, for digital data transmission - Part 008: Single braid - Star Quad 100 Ohms - Type KD - Product standard

Série aérospatiale - Câbles électriques pour transmission de données numériques - Partie 008 : Simple tresse - Quarte en étoile 100 ohms - Type KD - Norme de produit

Luft- und Raumfahrt - Elektrische Leitungen für Digitaldatenübertragungen - Teil 008: Einfach geschirmt - Quad 100 Ohm - Typ KD - Produktnorm

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 3375-008:2022) 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 document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3375-008:2009.

The main changes with respect to the previous edition are listed in the following table.

Table 1 — Main changes to previous edition

prEN/EN Number	Edition	Publication Date	Modification	Reason and validation
prEN 3375 -008	P1	2008–01–31	§1 SCOPE: Add sentence “The cable shall resist a long-term temperature between –65 °C and +200 °C. Moreover, cable materials needs to have compatibility with 200 °C peak exposure.”	Add complementary information about T °C compatibility regarding environment and cable materials.
			§5 TESTS Table3, EN3475–402: Change from “Applicable T °C = 125 ± 5 °C. shrinking of the insulation = 0,8 mm max.” to “Not Applicable” on Component (samples from finished cable)	Harmonization with AIRBUS ABS1503 specification
			§5 TESTS Table 3, EN 3475-404: Change from “Applicable T °C = 125 ± 5 °C. Mandrel Ø = 20 mm” to “Not Applicable” on Component (samples from finished cable)	Harmonization with AIRBUS ABS1503 specification

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1 Scope

This document specifies the dimensions, tolerances, required characteristics and the mass of an AWG 24 shielded quad cable, type KD, intended for high speed (100 Mbit/s) full duplex Ethernet networks.

Linked to this particular application, the operating temperatures of the cable are between −65 °C and 125 °C.

The cable resists a long-term temperature between −65 °C and +200 °C.

Moreover, cable materials have compatibility with 200 °C peak exposure.

This cable is laser markable, this marking satisfies the requirements of EN 3838.

The characteristics impedance are (100 ± 15) Ω.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3375-001, *Aerospace series - Cable, electrical, for digital data transmission - Part 001: Technical specification*[1)]

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EN 3375-002, *Aerospace series - Cable, electrical, for digital data transmission - Part 002: General*

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EN 3475 (all parts), [2)], Aerospace series — Cables, electrical, aircraft use — Test methods

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EN 3838, *Aerospace series - Requirements and tests on user-applied markings on aircraft electrical cables*

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EN 9133, *Aerospace series - Quality Management Systems - Qualification Procedure for Aerospace Standard Products*

TR 6058, *Aerospace series — Cable code identification list* [3)]

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at https://www.electropedia.org/

[1)] Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), https://www.asd-stan.org/.
[2)] All parts quoted in Table 4 of this document.
[3)] Published as ASD-STAN Technical Report at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), https://www.asd-stan.org/.

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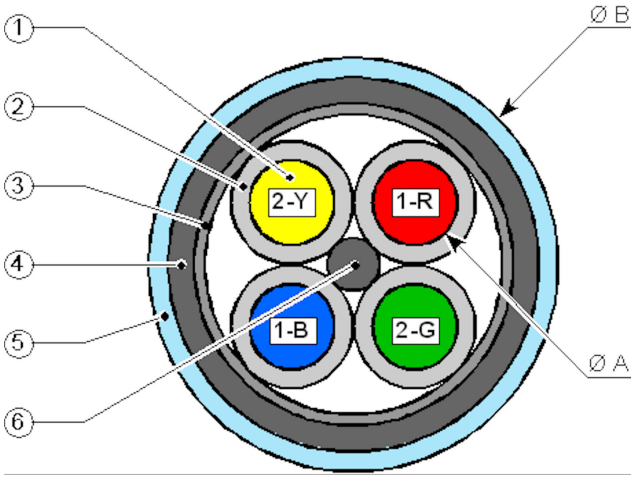
4 Required characteristics

4.1 Configuration, dimensions, tolerances and mass

The configuration, dimensions and tolerances shall be in accordance with Figure 1 and Table 2.



NOTE Number of elements in accordance with Table 2.

Figure 1 — Configuration, dimensions and tolerances

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Table 2 — Dimensions, tolerances and general characteristics

Stranded conductor (Ø *A*)	0,598 mm ≤ Ø ≤ 0,656 mm [a]
Insulation diameter (single wire)	1,35 mm ≤ Ø ≤ 1,52 mm [a]
Braid, shield	Strand diameter: 0,10 mm
Outer diameter of cable (Ø *B*)	< 5,0 mm
Colour of the jacket (5)	Light blue
Colour of components (1)	Pair 1: Red (+), Blue (−) Pair 2: Yellow (+), Green (−)
Minimum bending radius for dynamic installation	10 × Max. outer diameter
Minimum bending radius in static	5 × Max. outer diameter

[a] Adapted tools are requested for stripping.

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4.2 Material

The material and surface treatment shall be in accordance with Table 2.

Table 3 — Material

No. of element	Element	Material
1	Stranded conductor	Silver plated copper
2	Insulation	Fluoropolymer
3	Protection tape	Synthetic
4	Braid	Silver plated copper
5	Jacket	Fluoropolymer
6	Filler	Fluoropolymer

4.3 General characteristics

General characteristics shall be in accordance with Table 2.

5 Tests

Tests shall be in accordance with Table 4.

Maximum attenuation of the cable at 25 °C shall be in accordance with Table 5.

Minimum near end cross-talk of the cable and contacts shall be in accordance with Table 6.

Transfer impedance shall be in accordance with Table 7.

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Table 4 — Tests as per EN 3475

EN 3475-	Test	Carried out on/Requirement	
		Component (samples from finished cable)	Cable
100	General	Not applicable	Applicable
201	Visual examination	Applicable	Applicable
202	Mass	Not applicable	Applicable, see 4.1.
203	Dimensions	Applicable	Applicable See Table 1.
301	Ohmic resistance per unit length	Not applicable	Applicable Maximum electrical loop resistance 192 Ω/km
302	Voltage proof test	Not applicable	Applicable Conductor/conductor Conductors/shield DC: 1 kV (1 mn) or 2,5 kV (2 s) AC: 700 V (1 mn) or 1,7 kV (2 s)
303	Insulation resistance	Not applicable	Applicable ≥ 1 500 MΩ.km at 20 °C

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304	Surface resistance	Applicable 1 250 MΩ.mm	Applicable 1 250 MΩ.mm
305	Overload resistance	Not applicable	Not applicable
306	Continuity of conductors	Not applicable	Not applicable
307	Corona extinction voltage	Not applicable	Not applicable
401	Accelerated ageing	Not applicable	Applicable *T* = (155 ± 5) °C, 168 h Mandrel Ø = 60 mm Load = 0,7 daN
402	Shrinkage and delamination	Not applicable	Applicable *T* = (125 ± 5) °C shrinking of the jacket = 5 mm max.
403	Delamination and blocking	Not applicable	Applicable *T* = (125 ± 5) °C Mandrel Ø = 60 mm
404	Thermal shock	Not applicable	Applicable 30 min at (125 ± 5) °C / 30 min at −65 °C/30 min at 20 °C shrinking of the jacket = 5 mm max.
405	Bending at ambient temperature	Not applicable	Applicable Mandrel Ø = 60 mm Load = 0,7 daN
406	Cold bend test	Not applicable	Applicable *T* = −65 °C Mandrel Ø = 60 mm Load = 0,7 daN
407	Flammability	Not applicable	Applicable Load = 1 daN
408	Fire resistance	Not applicable	Not applicable
409	Air-excluded ageing	Not applicable	Not applicable
410	Thermal endurance	Not applicable	Not applicable
411	Resistance to fluids	Not applicable	Applicable
412	Humidity resistance	Not applicable	Not applicable
413	Wrap back test	Not applicable	Not applicable
414	Differential scanning calorimeter (DSC test)	Not applicable	Not applicable
415	Rapid change of temperature	Not applicable	Not applicable
416	Thermal stability	Not applicable	Not applicable
418	Thermal endurance for conductors	Not applicable	Not applicable

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501	Dynamic cut-through	Not applicable	Applicable At 23 °C: > 1 daN At operating temperature: ≥ 0,5 daN
502	Notch propagation	Not applicable	Applicable Notch depth = 0,05 mm Mandrel Ø = 60 mm
503	Scrape abrasion	Not applicable	Applicable at 23 °C *F* = 1 daN
504	Torsion	Not applicable	Not applicable
505	Tensile test on conductors and strands	Applicable TS ≥ 45 N and A % ≥ 10	Not applicable
506	Plating continuity	Applicable	Applicable
507	Adherence of plating	Applicable	Applicable
508	Plating thickness	Applicable [a]	Applicable [a]
509	Solderability	Not applicable	Not applicable
510	Tensile strength and elongation of extruded insulation, sheath and jacket material	Not applicable	Not applicable
511	Cable-to-cable abrasion	Not applicable	Not applicable
512	Flexure endurance	Not applicable	Not applicable
513	Deformation resistance (Installation with plastic cable ties)	Not applicable	Not applicable
514	Porosity of copper cladding on aluminium strands	Not applicable	Not applicable
601	Smoke density	Not applicable	Applicable T = 4 min ; D_m = 200
602	Toxicity	Not applicable	Applicable T = 4 min
603	Resistance to wet arc tracking	Not applicable	Not applicable
604	Resistance to dry arc propagation	Not applicable	Not applicable
605	Wet short circuit test	Not applicable	Not applicable
701	Strippability and adherence of insulation to the conductor	Applicable 0,25 daN (see [a] of Table 1)	Applicable
702	Screen pushback capability	Not applicable	Applicable

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