SLOVENSKI STANDARD
SIST EN 4604-003:2009

01-maj-2009

Aeronavtika - Kabli, električni, za prenos signala - 003. del: Kabli, koaksialni, 50 ohmov, 200 ºC, tip WZ - Standard za proizvod

Aerospace series - Cable, electrical, for signal transmission - Part 003: Cable, coaxial, 50 ohm, 200 °C, type WZ - Product standard

Luft- und Raumfahrt - Elektrisch Leitungen für Signalübertragungen - Teil 003: Koaxialkabel, 50 Ohm, 200 °C, Typ WZ - Produktnorm

Série aérospatiale - Câbles électriques pour transmission de signaux - Partie 003: Câble coaxial, 50 ohm, 200 °C, type WZ - Norme de produit

Ta slovenski standard je istoveten z: **EN 4604-003:2009**

ICS:

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 - Cable, electrical, for signal transmission - Part 003: Cable, coaxial, 50 ohm, 200° C, type WZ - Product standard

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This European Standard was approved by CEN on 21 June 2008.

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

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Foreword

This document (EN 4604-003:2009) 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of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

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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 the characteristics of a UV laser printable coaxial cable, 50 Ω, type WZ, for use in aircraft electrical systems at operating temperatures between – 65 °C and 200 °C and especially for high frequency up to 3 GHz.

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*

EN 3838, *Aerospace series — Requirements and tests on user-applied markings on aircraft electrical cables* 1)

EN 4604-001, *Aerospace series — Cable, electrical, for signal transmission — Part 001: Technical specification*

EN 4604-002, *Aerospace series — Cable, electrical, for signal transmission — Part 002: General*

TR 6058, *Aerospace series — Cable code identification list* 2)

ASTM B 298-99, *Standard specification for silver-coated soft or annealed copper wire* 3)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 3475-100:2002 apply.

4 Required characteristics

4.1 Material, construction, dimensions and mass

4.1.1 Material

See Table 1.

Table 1 — Material

	Material	Finish	Colour
Conductor	Single strand copper per ASTM B298-99	1 µm silver plated	Without colouration
Dielectric	Fluoropolymer	—	Without colouration
Screen (foil)	Metallized Foil	—	Without colouration
Shield	Braid, copper per ASTM B298-99	1 µm silver plated	Without colouration
Jacket	Fluorinated Ethylene Propylene (FEP)	—	White

* And all parts quoted in Table 4.

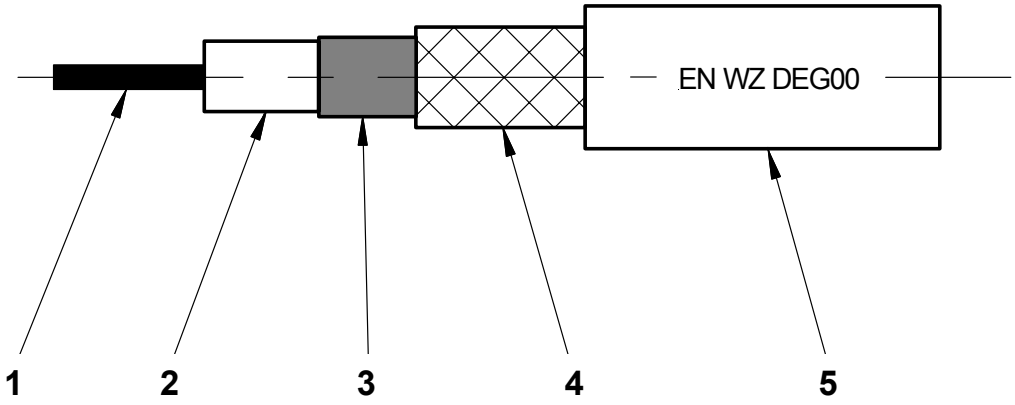
1) Published as ASD Prestandard at the date of publication of this standard.

2) Published as ASD Technical Report at the date of publication of this standard.

3) Published by: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103, USA.

4.1.2 Construction, dimensions and mass

See Figure 1 and Table 2.



Key

1 Conductor
2 Dielectric
3 Screen (foil)
4 Shield
5 Jacket

Figure 1 — Construction

Table 2 — Dimensions and mass

Diameter mm									Mass g/m	
Conductor		Dielectric		Shield		Cable				
min.	max.	min.	max.	min.	max.	min.	nom.	max.	nom.	max.
0,88	0,93	2,20	2,50	2,90	3,20	3,40	3,60	3,70	26	30

4.2 General characteristics

— Operating temperature: – 65 °C to 200 °C

— Minimum bend radius:
  — in static use: 37 mm
  — in dynamic use: 100 mm

— Performances are guaranteed up to 3 GHz.

4.3 Electrical characteristics

— Characteristic impedance: Zc = (50 ± 2) Ω.

— Maximum power handling (at sea level): see Table 3 and Figure 2.

— Attenuation versus frequency: see Table 3 and Figure 2.

— Capacitance per unit length: 88 pF/m max.

— Velocity of propagation: 0,75 c nom.

— Transfer impedance from 1 MHz to 3 000 MHz: 30 mΩ/m max.

Table 3 — Frequency, attenuation and power handling

Frequency MHz	50	200	400	1 000	3 000
Attenuation dB/100 m [a]	11	19	28	47	90
Power handling cw W [a]	1 100	660	450	250	150
[a] Maximum attenuation and power handling values of a WZ cable.					

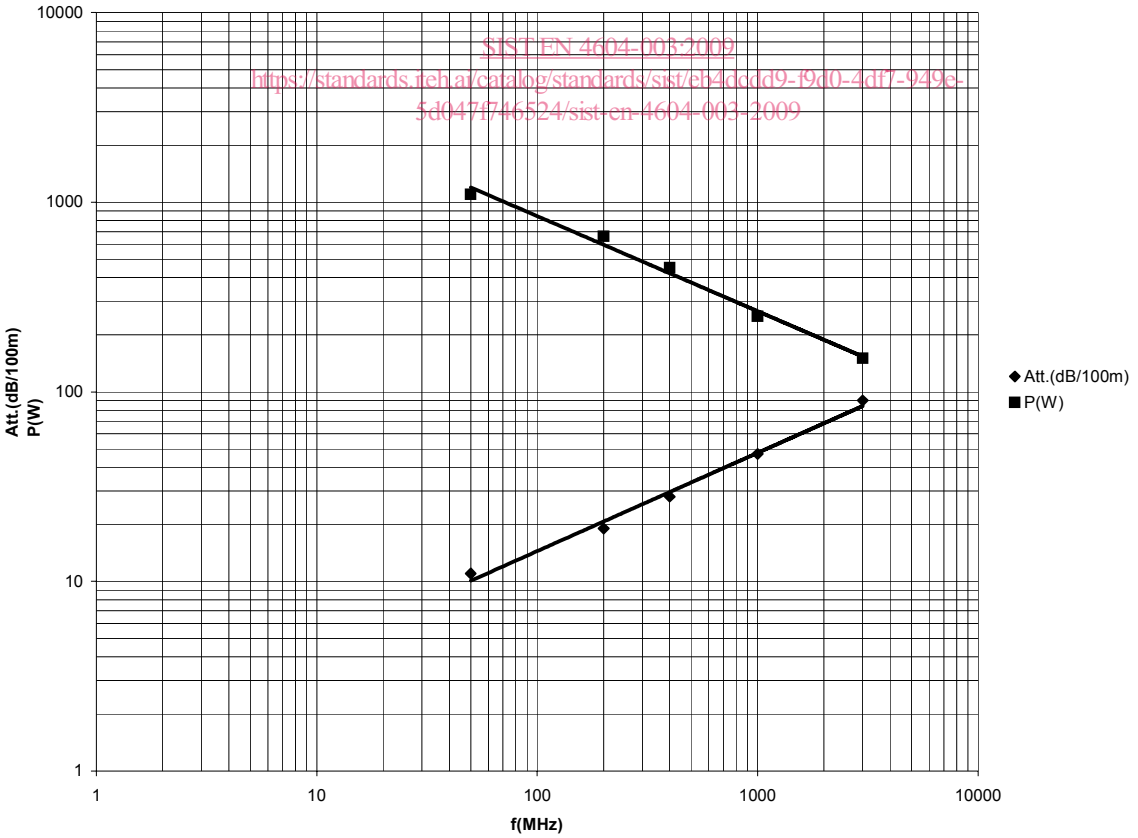


Figure 2 — Maximum attenuation curve (ascending) – Power curve (descending)

4.4 Tests

See Table 4.

Table 4 — Tests

EN 3475-	Designation of the test	Remarks
201	Visual examination	Applicable
202	Mass	Applicable
203	Dimensions	Applicable
301	Ohmic resistance per unit length	Applicable 28 Ω/km max.
302	Voltage proof test	Applicable Dielectric: — Dry test: 4 000 VAC Jacket: — Dry test: 2 000 VAC or — Dry impulse test: 5 000 V Immersion test: 1 000 VAC
303	Insulation resistance	Applicable 1 000 MΩ.km min. at 20 °C between conductor and shield
304	Surface resistance	Applicable 1 250 MΩ.mm min. at 20 °C
305	Overload resistance	Not applicable
306	Continuity of conductors	Applicable
307	Corona extinction voltage	Applicable Extinction voltage = 1 900 VAC
401	Accelerated ageing	Not applicable
402	Shrinkage and delamination	Not applicable
403	Delamination and blocking	Not applicable
404	Thermal shock	Not applicable
405	Bending at ambient temperature	Not applicable
406	Cold bend test	Applicable Load = 7 N Temperature (– 65 ± 2) °C Mandrel diameter 50 mm
407	Flammability	Applicable Load = 10 N
408	Fire resistance	Not applicable
409	Air-excluded ageing	Not applicable

continued