SLOVENSKI STANDARD
SIST EN 4604-007:2020

01-februar-2020

Nadomešča:
SIST EN 4604-007:2008

Aeronavtika - Kabli, električni, za prenos signala - 007. del: Kabli, koaksialni, 50 ohm, 200 °C, tip WN - Standard za proizvod

Aerospace series - Cable, electrical, for signal transmission - Part 007: Cable, coaxial 50 Ohm, 200 °C, type WN - Product standard

Luft- und Raumfahrt - Elektrische Leitungen für Signalübertragungen - Teil 007: Koaxialkabel, 50 Ohm, 200 °C, Typ WN - Produktnorm

Série aérospatiale - Câbles électriques pour transmission de signaux - Partie 007 : Câble coaxial, 50 Ohms, 200 °C, type WN - Norme de produit

Ta slovenski standard je istoveten z: **EN 4604-007:2019**

ICS:

33.120.10	Koaksialni kabli. Valovodi	Coaxial cables. Waveguides
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

SIST EN 4604-007:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4604-007

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ICS 49.060

Supersedes EN 4604-007:2007

English Version

Aerospace series - Cable, electrical, for signal transmission - Part 007: Cable, coaxial, 50 ohms, 200 °C, type WN - Product standard

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Luft- und Raumfahrt - Elektrische Leitungen für Signalübertragungen - Teil 007: Koaxialkabel, 50 Ohm, 200 °C, Typ WN - Produktnorm

This European Standard was approved by CEN on 13 October 2019.

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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-CENELEC Management Centre has the same status as the official versions.

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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 (EN 4604-007:2019) 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 document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies the required characteristics of a coaxial cable, 50 Ω, type WN, for use in aircraft electrical systems at operating temperature between – 55 °C and 200 °C and especially for high frequency up to 6 GHz.

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 3475-100 (all parts), *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General*

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*

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

TR 6058, *Aerospace series — Cable code identification list* [1)]

ASTM B298-99, *Standard specification for silver-coated soft or annealed copper wire* [2)]

MIL-PRF-39012F, *Performance specification: connectors, coaxial, radio frequency, general specification for* [3)]

3 Terms and definitions

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

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

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

3.1
epsilon (ε)
value of dielectric constant

1) Published as ASD-STAN Technical Report at the date of publication of this standard by AeroSpace and Defence industries Association of Europe - Standardization (ASD-STAN) ,http://www.asd-stan.org/

2) Published by: ASTM National (US) American Society for Testing and Materials, http://www.astm.org/

3) Published by: DoD National (US) Mil. Department of Defense, https://www.defense.gov/

4 Required characteristics

4.1 Material, construction, dimensions and mass

4.1.1 Material

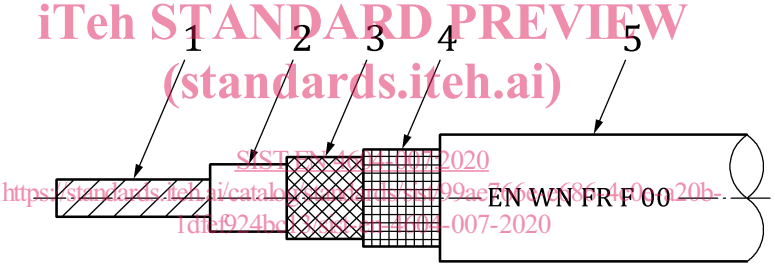
See Table 1.

Table 1 — Material

	Material	Finish	Colour
Conductor	Single-strand copper per ASTM-B298-99	1 µm silver plated	—
Dielectric	Fluorocarbon dielectric with low epsilon (PTFE)	—	—
Screen (foil)	Tape, silver plated copper or silver alloy	—	—
Shield	Braid, copper per ASTM-B298-99	1 µm silver plated	—
Jacket	Extruded Fluorinated Ethylene Propylene (FEP)	—	Violet

4.1.2 Construction, dimensions and mass

See Figure 1 and Table 2.



Key

1 conductor
2 dielectric
3 screen
4 shield
5 jacket

Figure 1 — Construction

Table 2 — Dimensions and mass

Diameter mm									Mass g/m	
Conductor			Dielectric		Shield	Cable				
min.	nom.	max.	min.	max.		min.	nom.	max.	nom.	max.
2,27	2,30	2,33	6,1	6,3	7,3 ± 0,2	7,80	8,00	8,20	135	145

In order to ensure mechanical integrity (connection strength as per MIL-PRF-39012) the minimum shield strand diameter shall be 0,20 mm.

The dielectric diameter (min. – max.) shall be maintained during connection (after unwrapping screen).

4.2 General characteristics

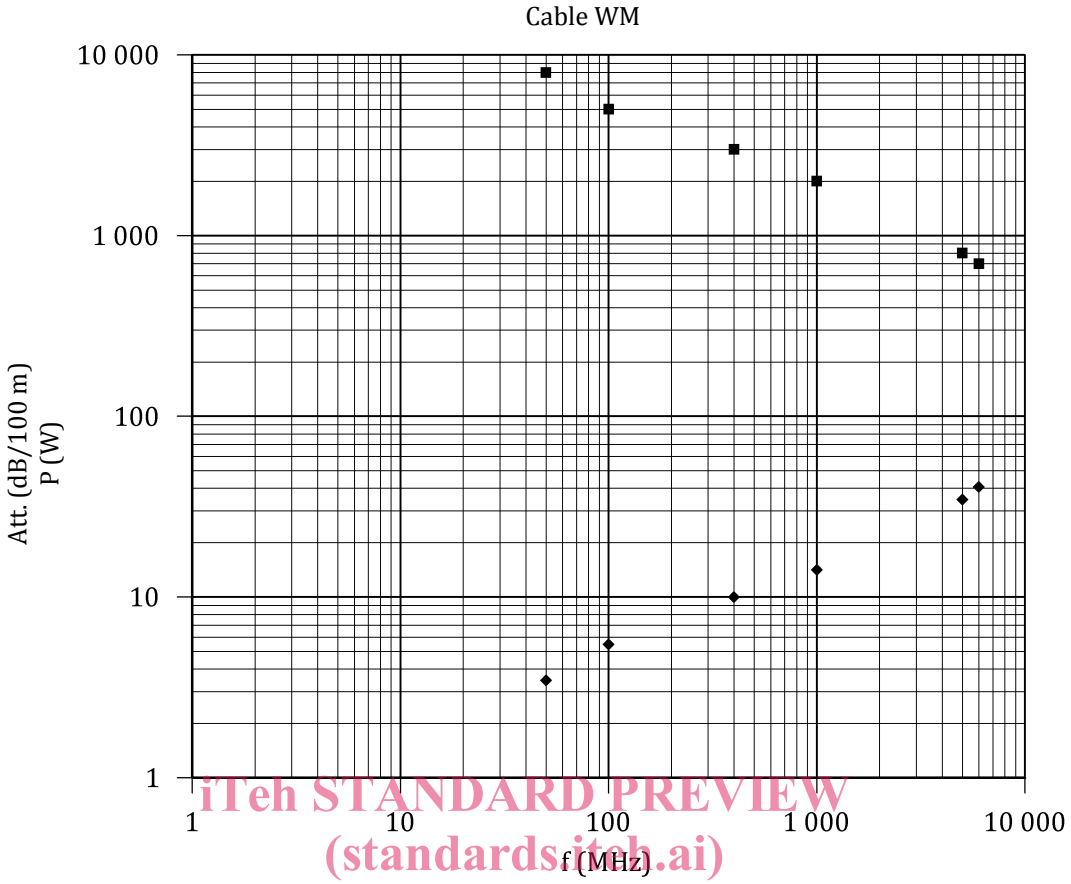
- Operating temperature: – 55 °C to 200 °C;
- Minimum bend radius:
  - in static use: 80 mm;
  - in dynamic use: 120 mm.
- Performances are guaranteed up to 6 GHz.

4.3 Electrical characteristics

- characteristic impedance: $Z_c = (50 \pm 3)\ \Omega$;
- capacitance per unit length: $C_p = 82$ pF/m max.;
- transfer impedance up to 400 MHz: 20 mΩ/m max.;
- operating voltage: 1 000 V RMS max.;
- maximum power handling (at sea level): see Table 3 and Figure 2;
- attenuation versus frequency: see Table 3 and Figure 2;
- velocity of propagation: v ≥ 243.000 km/s (vr = 81 % min.).

Table 3 — Frequency, attenuation and power handling

Frequency MHz	50	100	400	1 000	5 000	6 000
Attenuation dB/100 m	3,5	5,5	10	15	35	41
Power handling W	8 000	5 000	3 000	2 000	800	700



Key

■ Attenuation (dB/100 m)

◆ P (W)

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

4.4 Tests

See Table 4.