



SLOVENSKI STANDARD
SIST EN 4604-001:2019

01-september-2019

Nadomešča:
SIST EN 4604-001:2009

Aeronavtika - Kabli, električni, za prenos signala - 001. del: Tehnična specifikacija

Aerospace series - Cable, electrical, for signal transmission - Part 001: Technical specification

Luft- und Raumfahrt - Elektrische Leitungen für Signalübertragungen - Teil 001: Technische Lieferbedingungen

Série aérospatiale - Câbles électriques pour transmission de signaux - Partie 001 : Spécification technique

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Ta slovenski standard je istoveten z: EN 4604-001:2019

ICS:

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

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EUROPEAN STANDARD

EN 4604-001

NORME EUROPÉENNE

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English Version

Aerospace series - Cable, electrical, for signal transmission - Part 001: Technical specification

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transmission de signaux - Partie 001 : Spécification
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Signalübertragungen - Teil 001: Technische
Lieferbedingungen

This European Standard was approved by CEN on 30 December 2018.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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 4604-001:2019) 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 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 December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.

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.

This document supersedes EN 4604-001:2009.

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

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EN 4604-001:2019 (E)**1 Scope**

This European Standard specifies the required characteristics, test methods, qualification and acceptance conditions of signal transmission electrical cables.

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*, *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*

EN 4604-009, *Aerospace series — Cable, electrical, for signal transmission — Part 009: Cable, coaxial, light weight, 50 ohms, 180 °C, type KW (light WN) — Product standard*

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

ISO 2574, *Aircraft — Electrical cables — Identification marking*

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

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:

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

4 Materials and construction of cables**4.1 General**

The composition, dimensions and mass of the cable shall conform to the characteristics below, as well as the values specified in the product standards.

4.2 Conductor**4.2.1 Material**

See product standards.

* And all parts quoted in Table 1.

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

4.2.2 Construction

See product standards, conductor shall not be spliced.

4.3 Dielectric

See product standards.

4.4 Screening

4.4.1 Material

The materials used for screening are defined in the product standards.

The screen strands or strips shall be free of kinks or cracks and their surface shall have no corrosion at all or any other impurities.

4.4.2 Construction

Construction shall be in accordance with the product standard.

Splices of the individual strands or strips may be affected by brazing, soldering or folding in.

The number of splices shall not exceed 1 per 3 m length of cable.

4.4.3 Screen coverage

The screen is constructed in such a way that the screen meets the electrical requirements defined in the product standards.

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4.5 Outer jacket

See product standards.

4.6 Colours of components and jacket

See product standards.

5 Required characteristics

The characteristics of the cables, tested according to the methods described hereafter, shall comply with the values given in the product standards.

6 Test methods

See Table 1.

Table 1 — Tests: methods, application and requirements (1 of 4)

§ No.	Tests							Requirements (and/or particulars)	
	Description	EN 3475- (and/or particulars)	Qualification ^a (see 7.1)	First article inspection (see 7.2.5)	Each delivery		Periodic Every three years (see 7.2.4)		
					On all cables (see 7.2.1 and 7.2.2)	Prior to delivery (see 7.2.1 and 7.2.3)			
6	General	100	X	X	X	X	X		
6.1	Visual examination	201	3	3	X			Marking: Clause 8	
6.2	Mass	202	3	3		X		Product standard	
6.3	Dimensions (all) — outer diameter.	203	3	3		X		Product standard	
6.4	Ohmic resistance per unit length	301	3	3		X		Product standard	
6.5	Voltage proof test: — dielectric dry test; — jacket immersion test; — jacket dry test.	302	X 3 X	X 3 X	X X X		1	Product standard	
6.6	Insulation resistance — dry test; — immersion test.	303	SIST EN 4604-001:2019 https://standards.iteh.ai/catalog/standards/sist/9ff860bd-0bec-4636-8ef7-89424113d0f3/sist-en-4604-001-2019		X			Product standard	
6.7	Surface resistance	304	3				X	Product standard	
6.8	Overload resistance	305	Not applicable						
6.9	Continuity of conductors	306	1	1	X				
6.10	Corona extinction voltage	307	3	3			X	Product standard	
6.11	Accelerated ageing	401	Not applicable						
6.12	Shrinkage and delamination	402	Not applicable						
6.13	Delamination and blocking	403	Not applicable						
6.14	Thermal shock	404	Not applicable						
6.15	Bending at ambient temperature	405	Not applicable						
6.16	Cold bend test	406 Mandrel diameter and load: Product standard	3	3			X	Product standard	

Table 1 — Tests: methods, application and requirements (2 of 4)

§ No.	Tests							Requirements (and/or particulars)
	Description	EN 3475- (and/or particulars)	Qualification ^a (see 7.1)	First article inspection (see 7.2.5)	Each delivery		Periodic Every three years (see 7.2.4)	
					On all cables (see 7.2.1 and 7.2.2)	Prior to delivery (see 7.2.1 and 7.2.3)		
6.17	Flammability	407 Load: Product standard	3				X	
6.18	Fire resistance	408	Not applicable					
6.19	Air-excluded ageing	409	Not applicable					
6.20	Thermal endurance	410	Not applicable					
6.21	Resistance to fluids	411	1 per fluid				X	
6.22	Humidity resistance	412	Not applicable					
6.23	Wrap back test	413	Not applicable					
6.24	Differential scanning calorimeter (DSC test)	414	Not applicable					
6.25	Rapid change of temperature	415	1				X	Product standard
6.26	Thermal stability	416	1				X	Product standard
6.27	Fire resistance of cables confined inside a harness	417	Not applicable					
6.28	Thermal endurance for conductors	418	applicable (for EN 4604-009 type KW)					
6.29	Dynamic cut-through	501	Not applicable					
6.30	Notch propagation	502 Cut depth: Product standard	3	3			X	
6.31	Scrape abrasion	503 Load: Product standard	3	3			X	Requirements to be considered at 20 °C unless otherwise specified.
6.32	Torsion	504	Not applicable					
6.33	Tensile test on conductors and strands	505	3	X			X	Product standard