



SLOVENSKI STANDARD

SIST EN 2084:2015

01-november-2015

Nadomešča:

SIST EN 2084:2006

Aeronavtika - Kabli, električni, za splošne namene, z vodniki iz bakra ali bakrene zlitine - Tehnična specifikacija

Aerospace series - Cables, electrical, general purpose, with conductors in copper or copper alloy - Technical specification

Luft- und Raumfahrt - Elektrische Leitungen, für allgemeine Verwendung, mit Leitern aus Kupfer oder Kupferlegierung - Technische Lieferbedingungen

Série aérospatiale - Câbles, électriques d'usage général, avec conducteurs en cuivre ou en alliage de cuivre - Spécification technique

Ta slovenski standard je istoveten z: EN 2084:2015

ICS:

29.060.20	Kabli	Cables
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems
77.150.30	Bakreni izdelki	Copper products

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en,fr,de

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EUROPEAN STANDARD

EN 2084

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2015

ICS 49.060

Supersedes EN 2084:2005

English Version

Aerospace series - Cables, electrical, general purpose, with conductors in copper or copper alloy - Technical specification

Série aérospatiale - Câbles, électriques, d'usage général, avec conducteurs en cuivre ou en alliage de cuivre - Spécification technique

Luft- und Raumfahrt - Elektrische Leitungen, für allgemeine Verwendung, mit Leitern aus Kupfer oder Kupferlegierung - Technische Lieferbedingungen

This European Standard was approved by CEN on 7 February 2015.

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.

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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.

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, 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: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 2084:2015) 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 March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 2084:2005.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 2084:2015 (E)**1 Scope**

This standard specifies the characteristics, test methods, qualification and acceptance conditions of single and multicore electric cables, without jackets, for general purpose with conductors in copper or copper alloy, intended for installation in aircraft circuits.

The insulation of these cables is designed to withstand aircraft voltages at a frequency not exceeding 2 000 Hz. Unless specified by individual product standards the maximum demonstrated ac voltage of rating of these cables is 115 V rms phase to neutral and 200 V rms phase to phase.

They are divided into types, the characteristics of which are given in the product standards. Unless otherwise specified in the product standard, the tests defined in this standard apply.

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 or copper alloy conductors for electrical cables — Product standard*

EN 2235, *Aerospace series — Single and multicore electrical cables, screened and jacketed — Technical specification*

EN 3475-100 (all parts), *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*

<https://standards.iteh.ai/catalog/standards/sist/d65d5f3c-a362-4944-a4e3-4a6616cbe70d/sist-en-2084-2015>

EN 9102, *Aerospace series — Quality systems — First article inspection*

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

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

3 Terms, definitions and symbols

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

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

They shall conform to EN 2083 unless otherwise specified.

4.2 Finished cables

The insulation material shall present on uniform circular cross-section throughout the length of the cable.

Covering over the insulation shall be treated and applied in such a manner that the cables present a smooth appearance and are able to accept marking.

Multiconductors assembly shall be cabled according EN 2235.

5 Required characteristics

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

6 Tests methods

6.1 Single core cables

See Table 1.

Table 1 — Tests: methods, application, requirements - Single core cables (1 of 4)

§ No.	Tests							Requirements (and/or particulars)
	Description	EN 3475- (and/or particulars)	Qualification ^a (see 7.1).	First article (see 7.1.5)	Each delivery			
					On all cables (7.2.1 and 7.2.2)	Prior to delivery (7.2.1 and 7.2.2)	Periodic every three years (7.2.4)	
6	Test conditions	100	X	X	X	X	X	
6.1	Visual examination	201	3	3	X			Marking: according to Clause 8
6.2	Mass	202	3	3		X		Minimum length: 0,5 m
6.3	Dimensions (all) — outer diameter	203	3	3	X			Conductor: EN 2083, unless otherwise specified. Product standard
6.4	Ohmic resistance per unit length	301	3	3		X		Product standard
6.5	Voltage proof test: — immersion test; — dry test; — or dry impulse test.	302 Alternative to dry test	3	3	X X			2,5 KV r.m.s. 5 KV r.m.s. 8 KV peak voltage
6.6	Insulation resistance — at (20 ± 2) °C; — at (95 ± 2) °C.	303	3	3			X	For a length of 1 km: 1 500 MΩ minimum 15 MΩ minimum
6.7	Surface resistance	304	3					Minimum: 1 250 mΩ × mm
6.8	Overload resistance	305 T1 and T2: product standard	3				X	Applicable to cable of 0,6 mm ² only
6.9	Continuity of conductors	306	1	1	X			
6.10	Corona extinction voltage	307	X	X			X	Applicable for cables rated above 200 V rms

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§ No.	Tests						Requirements (and/or particulars)	
	Description	EN 3475- (and/or particulars)	Qualification ^a (see 7.1).	First article (see 7.1.5)	Each delivery			Periodic every three years (7.2.4)
					On all cables (7.2.1 and 7.2.2)	Prior to delivery (7.2.1 and 7.2.2)		
6.11	Accelerated ageing	401 Mandrel diameter and test load: Table 4 Temperature: product standard	3	3			X	
6.12	Shrinkage and delamination	402 Temperature: product standard	3	3		X		Product standard
6.13	Delamination and blocking	403 Mandrel diameter: Table 4 Temperature: product standard	3	3		X		
6.14	Thermal shock	404 Temperature: product standard	3	3		X		Product standard
6.15	Bending at ambient temperature	405 Mandrel diameter: Table 4	3	3				
6.16	Cold bend test	406 Mandrel diameter and test load: Table 4	3	3			X	
6.17	Flammability	407	3				X	Product standard
6.18	Fire resistance	408						Not applicable
6.19	Air-excluded ageing	409 Temperature and time: product standard						Not applicable (unless specified in the product standard)
6.20	Thermal endurance	410	X					Product standard Applicable to cable of 0,6 mm ² only
6.21	Resistance to fluids	411	1/flui d				X	Immersion test applicable to cable of 0,6 mm ² only unless stated in the product standard
6.22	Humidity resistance	412 If method B: temperature and time: product standard	3				X	Method A or B as specified in product standard
6.23	Wrap back test	413	3	3			X	Applicable to cables ≤ 5 mm ²
6.24	Differential scanning calorimeter (DSC test)	414	X	X			X	
6.25	Rapid change of temperature	415						Not applicable
6.26	Thermal stability	416						Not applicable

§ No.	Tests						Requirements (and/or particulars)	
	Description	EN 3475- (and/or particulars)	Qualification ^a (see 7.1).	First article (see 7.1.5)	Each delivery			Periodic every three years (7.2.4)
					On all cables (7.2.1 and 7.2.2)	Prior to delivery (7.2.1 and 7.2.2)		
6.27	Fire resistance of cables confined inside a harness	417					Not applicable	
6.28	Thermal endurance for conductors	418					Not applicable	
6.29	Dynamic cut-through	501 (for insulation wall thickness ≤ 0,38 mm)	3	3			X Product standard (arithmetic mean value of eight tests per specimen)	
6.30	Notch propagation	502 Cut depth: product standard	3	3			X	
6.31	Scrape abrasion	503 Load: product standard	3	3			X Product standard (requirements to be considered at 20 °C unless otherwise specified)	
6.32	Torsion	504 Test load: Table 4 T3 and T4: product standard	3	3			X Applicable to cables ≤ 5 mm ²	
6.33	Tensile test on conductors and strands	505	3			X	EN 2083 unless otherwise specified Applicable on "raw material" and on finished cable	
6.34	Plating continuity	506	3			X	Applicable on "raw material" and on finished cable	
6.35	Adherence of plating	507	3			X		
6.36	Plating thickness	508	3			X	EN 2083 unless otherwise specified	
6.37	Solderability	509	3			X	Product standard	
6.38	Tensile strength and elongation of extruded insulation, sheath and jacket material	510	3			X	X Product standard	
6.39	Cable-to-cable abrasion	511 Mass: product standard	3				X Size 006 (20 AWG)	
6.40	Flexure endurance	512 Mandrel diameter and mass: product standard	3				X Applicable to cables ≤ 5 mm ²	
6.41	Deformation resistance (Installation with plastic cable ties)	513					Not applicable	