



SLOVENSKI STANDARD SIST EN 2854-003:2009

01-maj-2009

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8 Ycj bY`hYa dYfUhi fY`a YX`!) `š7 `]b`&* \$`š7 `!`\$\$` "XY.`GhUbXUfX`nUdfc]nj cX

Aerospace series - Cables, electrical for general purpose - Cross sections equal to and greater than 9 mm² - Operating temperatures between - 55 °C and 260 °C - Part 003: Product standard

Luft- und Raumfahrt - Elektrische Leitungen für allgemeine Verwendung - Querschnitte 9 mm² und größer - Betriebstemperaturen zwischen - 55 °C und 260 °C - Teil 003: Produktnorm
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Série aérospatiale - Câbles électriques d'usage général - Sections supérieures ou égales à 9 mm² - Températures de fonctionnement comprises entre - 55 °C et 260 °C - Partie 003: Norme de produit

Ta slovenski standard je istoveten z: EN 2854-003:2009

ICS:

49.060 Š`æp`æš`Å`^`[`|b`æ Aerospace electric
^`|`dã`æ`|`!`{`æš`Á`ã`c`{`ã equipment and systems

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EUROPEAN STANDARD

EN 2854-003

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2009

ICS 49.060

English Version

**Aerospace series - Cables, electrical for general purpose -
Cross sections equal to and greater than 9 mm² - Operating
temperatures between - 55 °C and 260 °C - Part 003: Product
standard**

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003 : Norme de produit

Luft- und Raumfahrt - Elektrische Leitungen für allgemeine
Verwendung - Querschnitte 9 mm² und größer -
Betriebstemperaturen zwischen - 55 °C und 260 °C - Teil
003: Produktnorm

This European Standard was approved by CEN on 4 July 2008.

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 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 Management Centre has the same status as the official versions.

[SIST EN 2854-003:2009](https://standards.iteh.ai/catalog/standards/sist/7104e2b3-2a41-441c-a37b-1a49a7d51a1c/EN-2854-003-2009)

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Foreword

This document (EN 2854-003:2009) 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.

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.

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.

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EN 2854-003:2009 (E)**1 Scope**

This standard specifies the characteristics of electrical cables for use in the on-board electrical systems of aircraft at operating temperatures between -55 °C and 260 °C for cross sections equal to and greater than 9 mm^2 .

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 2083, *Aerospace series — Copper and copper alloy conductors for electrical cables — Product standard*

EN 2084, *Aerospace series — Cables, electric, single-core, general purpose, with conductors in copper or copper alloy — Technical specification*

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

EN 2854-002, *Aerospace series — Cables, electrical for general purpose — Cross sections equal to and greater than 9 mm^2 — Operating temperatures between -55 °C and 260 °C — Part 002: General*

EN 3475-*, *Aerospace series — Cables, electrical, aircraft use — Test methods*

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

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3 Terms and definitions

SIST EN 2854-003:2009

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

4 Materials and construction**4.1 Materials**

Conductor: see EN 2854-002.

Insulation:

For all conductor size codes:

Taped layers of polyimide/PTFE/glass fibre impregnated with PTFE/PTFE.

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

* All parts quoted in Table 2.

4.2 Construction

See EN 2083 and Table 1.

Table 1

Code for nominal section	Nominal section mm ²	AWG ^a	Linear resistance at 20 °C Ω/km max.	External diameter		Mass kg/km max.
				min.	max.	
090	9	8	2,30	5,20	5,60	108
140	14	6	1,58	6,30	7,30	160
220	22	4	0,97	8,10	9,30	245
340	34	2	0,61	9,70	10,60	396
420	42	1	0,51	10,60	12,10	470
530	53	0	0,40	11,80	13,40	600
680	68	00	0,32	13,10	14,70	750
850	85	000	0,25	15,20	16,80	950
107	107	0000	0,20	16,70	18,40	1 200

^a AWG = closest American Wire Gage.

4.3 Number of cores

See EN 2854-002.

See EN 2235 for cabling.

4.4 Colour coding of cores

See EN 2854-002.

5 Required characteristics

According to EN 2084 and EN 3475-100.

See Table 2.

Table 2

EN 3475-	Test	Details
201	Visual examination	Applicable
202	Mass	Applicable; see Table 1.
203	Dimensions	Applicable; see Table 1.
301	Ohmic resistance per unit length	Applicable; see Table 1.
302	Voltage proof test	Applicable
303	Insulation resistance	Applicable
304	Surface resistance	Applicable
305	Overload resistance	Not applicable
306	Continuity of conductors	Applicable
307	Corona extinction voltage	Not applicable
401	Accelerated ageing	Applicable Temperature (310 ± 5) °C
402	Shrinkage and delamination	Applicable Temperature (310 ± 5) °C Maximum shrinkage at each end of cable: — 9 mm ² : 1,5 mm — 14 mm ² to 34 mm ² : 2 mm — 42 mm ² to 68 mm ² : 2,5 mm — 85 mm ² to 107 mm ² : 3 mm
403	Delamination and blocking	Applicable Temperature (310 ± 5) °C
404	Thermal shock	Applicable Temperature (290 ± 5) °C Maximum shrinkage at each end of cable: — 9 mm ² : 1,5 mm — 14 mm ² to 34 mm ² : 2 mm — 42 mm ² to 68 mm ² : 2,5 mm — 85 mm ² to 107 mm ² : 3 mm
405	Bending at ambient temperature	Applicable
406	Cold bend test	Applicable
407	Flammability	Applicable Burning time: 3 s max.
408	Fire resistance	Not applicable
409	Air-excluded ageing	Not applicable
410	Thermal endurance	Not applicable
411	Resistance to fluids	Applicable
412	Humidity resistance	Not applicable
413	Wrap back test	Not applicable

continued

Table 2 (concluded)

EN 3475-	Test	Details
414	Differential scanning calorimeter (DSC test)	Not applicable
415	Rapid change of temperature	Not applicable
416	Thermal stability	Not applicable
501	Dynamic cut-through	Not applicable
502	Notch propagation	Applicable Notch depth for nominal cross sections: — 9 mm ² and 14 mm ² = 40 µm — ≥ 22 mm ² = 50 µm
503	Scrape abrasion	Applicable Test force on needle = 15 N
504	Torsion	Not applicable
505	Tensile test on conductors and strands	Applicable
506	Plating continuity	Applicable
507	Adherence of plating	Applicable
508	Plating thickness	Applicable
509	Solder ability	Not applicable
510	Tensile strength and elongation of extruded insulation, sheath and jacket material	Not applicable
511	Cable-to-cable abrasion	Not applicable
512	Flexure endurance	Not applicable
513	Deformation resistance (Installation with plastic cable ties)	Not applicable
601	Smoke density	Applicable
602	Toxicity	Applicable
603	Resistance to wet arc tracking	Not applicable
604	Resistance to dry arc propagation	Not applicable
605	Wet short circuit test	Not applicable
701	Strip ability and adherence of insulation to the conductor	Applicable
702	Screen pushback capability	Not applicable
703	Permanence of manufacturer's marking	Applicable
704	Flexibility	Not applicable
705	Contrast measurement	Not applicable
706	Laser mark ability	Not applicable