
Aeronavtika - Električni kabli za splošno uporabo - Delovne temperature med -55°C in 260°C - 012. del: Družina DZ, enožilni kabli z možnostjo UV-laserskega tiskanja za uporabo pri atmosferi z nizkim tlakom - Standard za proizvod

Aerospace series - Cables, electrical, for general purpose - Operating temperatures between -55°C and 260°C - Part 012: DZ family, single UV laser printable for use in low pressure atmosphere - Product standard

Luft- und Raumfahrt - Leitungen, elektrisch, für allgemeine Verwendung - Betriebstemperaturen zwischen -55°C und 260°C - Teil 012: DZ-Familie, einadrige Leitungen, UV-Laser-bedruckbar, für Anwendung bei niedrigem Luftdruck - Produktnorm

<https://standards.iteh.ai/catalog/standards/sist/98e76a00-6551-4cf6-b2dd-420420342015>

Série aérospatiale - Câbles, électriques, d'usage général - Températures de fonctionnement comprises entre -55°C et 260°C - Partie 012 : Famille DZ, fil simple marquable au laser UV pour emploi en basse pression - Norme de produit

Ta slovenski standard je istoveten z: EN 2267-012:2015

ICS:

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

SIST EN 2267-012:2015

en,fr,de

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EUROPEAN STANDARD

EN 2267-012

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2015

ICS 49.060

English Version

**Aerospace series - Cables, electrical, for general purpose -
Operating temperatures between -55 °C and 260 °C - Part 012:
DZ family, single UV laser printable for use in low pressure
atmosphere - Product standard**

Série aérospatiale - Câbles, électriques, d'usage général -
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260 °C - Partie 012 : Famille DZ, fil simple marquable au
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Luft- und Raumfahrt - Leitungen, elektrisch, für allgemeine
Verwendung - Betriebstemperaturen zwischen -55 °C und
260 °C - Teil 012: DZ-Familie, einadrige Leitungen, UV-
Laser-bedruckbar, für Anwendung bei niedrigem Luftdruck -
Produktnorm

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

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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 foreword

This document (EN 2267-012:2015) 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 European 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 January 2016, and conflicting national standards shall be withdrawn at the latest by January 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.

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.

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EN 2267-012:2015 (E)**1 Scope**

This European Standard specifies the characteristics of UV laser printable electrical wires **DZ** family for use in the on board:

- 115 V (phase to neutral) or 200 V (phase to phase) electrical network of aircraft.
- 230 V (phase to neutral) or 400 V (phase to phase) electrical network of aircraft and particularly use in non-pressurized areas.

This cable family is used at operating temperature between $-65\text{ }^{\circ}\text{C}$ and $260\text{ }^{\circ}\text{C}$. These cables are demonstrated to be arc resistant for both networks (115 V and 230 V).

It shall also be possible to mark these cables by qualified compatible marking. These markings shall satisfy the requirements of EN 3838.

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 2084, *Aerospace series — Cables, electrical, general purpose, with conductors in copper alloy — Technical specification*

EN 2267-002, *Aerospace series — Cables, electrical, for general purpose — Operating temperatures between $-55\text{ }^{\circ}\text{C}$ and $260\text{ }^{\circ}\text{C}$ — Part 002: General*

EN 3475-100, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General*

EN 3475-201, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 201: Visual examination*

EN 3475-202, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 202: Mass*

EN 3475-203, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 203: Dimensions*

EN 3475-301, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 301: Ohmic resistance per unit length*

EN 3475-302, *Aerospace series — Cable, electrical, aircraft use — Test methods — Part 302: Voltage proof test*

EN 3475-303, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 303: Insulation resistance*

EN 3475-304, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 304: Surface resistance*

EN 3475-305, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 305: Overload resistance*

EN 3475-306, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 306: Continuity of conductors*

EN 3475-307, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 307: Corona extinction voltage*

- EN 3475-401, *Aerospace series — Cables, electrical, aircraft use — Test Methods — Part 401: Accelerated ageing*
- EN 3475-402, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 402: Shrinkage and delamination*
- EN 3475-403, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 403: Delamination and blocking*
- EN 3475-404, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 404: Thermal shock*
- EN 3475-405, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 405: Bending at ambient temperature*
- EN 3475-406, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 406: Cold bend test*
- EN 3475-407, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 407 : Flammability*
- EN 3475-410, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 410: Thermal endurance*
- EN 3475-411, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 411: Resistance to fluids*
- EN 3475-412, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 412: Humidity resistance*
- EN 3475-413, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 413: Wrap back test*
- EN 3475-414, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 414: Differential scanning calorimeter (DSC test)*
- EN 3475-501, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 501: Dynamic cut-through*
- EN 3475-502, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 502: Notch propagation*
- EN 3475-503, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 503: Scrape abrasion*
- EN 3475-504, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 504: Torsion*
- EN 3475-505, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 505: Tensile test on conductors and strands*
- EN 3475-506, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 506: Plating continuity*
- EN 3475-507, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 507: Adherence of plating*
- EN 3475-508, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 508: Plating thickness*
- EN 3475-601, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 601: Smoke density*

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EN 3475-602, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 602: Toxicity*

EN 3475-604, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 604: Resistance to dry arc propagation*

EN 3475-605, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 605: Wet short circuit test*

EN 3475-701, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 701: Strippability and adherence of insulation to the conductor*

EN 3475-703, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 703: Permanence of manufacturer's marking*

EN 3475-704, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 704: Flexibility*

EN 3475-705, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 705: Contrast measurement*

EN 3475-706, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 706: Laser markability*

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

EN 4434, *Aerospace series — Copper or copper alloy lightweight conductors for electrical cables — Product standard (Normal and tight tolerances)*

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

TR 6058 ¹⁾, *Aerospace series — Cable code identification list*
<https://standards.iteh.ai/catalog/standards/sist/98e76a00-6551-4cf6-b2dd-bea18d095423/sist-en-2267-012-2015>

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**4.1 Materials****4.1.1 Conductor**

These cable conductors shall be made of copper or copper alloy and nickel plated (code D) according to EN 4434 Table 2 (tight tolerances) for 001 to 140 section codes.

4.1.2 Insulation

All size codes shall be defined to satisfy all required characteristics of Clause 5.

The use of foamed insulation material is forbidden.

1) Published as ASD-STAN Technical Report at the date of publication of this European Standard (<http://www.asd-stan.org/>).

To minimize partial discharges effect:

- size and number of cavities (gas trap) inside the insulation shall be as low as possible
- at minimum bend radius there shall be no wrinkles outside the insulation (EN 3475-405).

Minimum bend radius shall be in accordance with bending diameter given in Table 4 of the technical specification EN 2084.

It shall be possible to mark the outer layer of the insulation by UV laser printing.

4.2 Construction

See EN 4434 and Table 1.

Table 1

Code for nominal section	Nominal section mm ²	AWG ^a	Linear resistance	External diameter		Mass
			at 20 °C	mm	mm	kg/km
			Ω/km	min.	max.	max.
012	1,2	16	14,5	2,38	2,70	23
030	3	12	6,8	3,23	3,61	41
051	5	10	4,1	3,68	4,21	62

^a AWG = closest American Wire Gage

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4.3 Number of cores

This European Standard specifies a UV laser markable single core.

4.4 Colour coding of cores

See EN 2267-002.