SLOVENSKI STANDARD
SIST EN 6059-303:2018

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Aeronavtika - Električni kabli, namestitev - Zaščitne obojke - Preskusne metode - 303. del: Odpornost proti tekočinam

Aerospace series - Electrical cables, installation - Protection sleeves - Test methods - Part 303: Resistance to fluids

Luft- und Raumfahrt - Elektrische Leitungen, Installation - Schutzschläuche - Prüfverfahren - Teil 303: Beständigkeit gegen Flüssigkeiten

Série aérospatiale - Câbles électriques, installation - Gaines de protection - Méthodes d'essais - Partie 303 : Résistance aux fluides

Ta slovenski standard je istoveten z: **EN 6059-303:2017**

ICS:

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

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English Version

Aerospace series - Electrical cables, installation - Protection sleeves - Test methods - Part 303: Resistance to fluids

Série aérospatiale - Câbles électriques, installation - Gaines de protection - Méthodes d'essais - Partie 303 : Résistance aux fluides

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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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Contents

Pages

European foreword

This document (EN 6059-303:2017) 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of an identical text or by endorsement, at the latest by May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

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1 Scope

This European Standard specifies a method for determining the fluid resistance of protection sleeves for electrical cable and cable bundles for aerospace application.

It shall be used together with EN 6059-100.

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 3909, *Aerospace series — Test fluids and test methods for electrical and optical components and sub-assemblies*

EN 6059-100, *Aerospace series — Electrical cables, installation — Protection sleeves — Test methods — Part 100: General*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 11075, *Aircraft — De-icing/anti-icing fluids — ISO type I*

ISO 11078, *Aircraft — De-icing/anti-icing fluids — ISO types II, III and IV*

AS 1241C, *Fire Resistant Phosphate Ester Hydraulic Fluid for Aircraft* [1)]

AMS 1424, *Deicing/Anti-Icing Fluid, Aircraft, SAE Type I* [1)]

AMS 1428H, *Fluid, Aircraft Deicing/Anti-Icing, Non-Newtonian (Pseudoplastic), SAE Types II, III, and IV* [1)]

AMS 1476C, *Deodorant, Aircraft Toilet* [1)]

ASTM D 740, *Standard Specification for Methyl Ethyl Ketone* [1)]

MIL-A-8243D, *Anti-icing and de-icing-defrosting fluids* [2)]

MIL-PRF-7870C, *Lubricating oil, general purpose, low temperature* [2)]

MIL-PRF-23699F, *Lubricating oil, aircraft turbine engine, synthetic base, NATO code number O-156* [2)]

MIL-PRF-87937D, *Cleaning compound, aerospace equipment* [2)]

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1) Published by: SAE National (US) Society of Automotive Engineers. (http://www.sae.org/)

2) Published by: DoD National (US) Mil. Department of Defense. (http://www.defenselink.mil/)

3 Preparation of specimens

A specimen with a maximum length of 600 mm is taken from a finished sleeve.

4 Apparatus

A bath suitable for immersing the specimen in the fluids and at the temperature specified in Clause 6 and the product standard.

Standard equipment for measuring the inner diameter and expandable range.

5 Method

Immerse one specimen, with the one end 150 mm above the surface, in each of the fluids listed in Table 1 or 2 plus those product standard for a period of 24 h at the test temperature specified in Table 1.

Remove the specimen and allow to cool at room temperature in free air for at least 1 h.

Examine the sample and carry out any post tests as specified in the product standard.

6 Test fluids

All materials shall be tested in accordance with one of the following:

Table 1 — Resistance to fluids – Compulsory fluids for textile sleeve

EN 3909 Test fluid No. (see Note 1)	**Fluid family**	**Test fluid to be used**	**Fluid in service** (Listed in the previous issue)		**Test temperature** ± 3 °C	**Flash point** °C
1b	Fuel	ISO 1817 Liquid F	JP5	NATO F44	25	60
2a	Synthetic hydraulic fluid	ISO 1817 Liquid 103	SKYDROL 500 B4 [a] SKYDROL LD4 [a]	AS 1241C	70	160
3b	Mineral lubricant	NATO 0-142	MIL-PRF-7870C	NATO 0-142 OM12		120
3d	Synthetic lubricant	NATO-160 OX26	NATO 0-156 OX27	–		210
N/A	Cleaning fluids	MIL-PRF-87937D type 1	–	–	25	–
4c		25 % propanol + 75 % white spirit v/v	–	–		–
N/A		–	Azeotropic R113 AZM [a] (R113 + methanol) or FORANE 141B [a] (see Note 3)	–		–
5a	Runway de-icer	50 % inhibited potassium acetate in water 20 % v/v	–	–	25	–
5b	Aircraft de-icing fluid	Ethylene Glycol 80 % + water 20 % v/v	AMS 1424 (see Note 2)	NATO S-742	25	–

NOTE 1 Additional test fluid and groups from EN 3909 may be specified in the product standard.

NOTE 2 SAE AMS 1424 supersedes MIL-A-8243D.

NOTE 3 The RM113 has been removed under the restrictions imposed by the **Montreal Protocol** on the use of CFC based compounds.

[a] Trade name of the product supplied by supplier.

Table 2 — Resistance to fluids – Compulsory fluids for non textile sleeve

Test fluid No.	Fluid family	Type	Test fluid	Test temperature (see Note 1) ± 2 °C
1a	Fuels	Gasoline	ISO 1817 Liquid B	40
1b		Kerosene	ISO 1817 Liquid FB	23
1c		Biofuel	Not applicable	
2a	Hydraulic Fluids	Phosphate based	ISO 1817 Liquid 103	70
2b		Silicone based	NATO-S-1714	50
2c		Mineral based	NATO-H-520	23
3a	Oils	Mineral base	NATO-0–1176 MMD-90	23
3b			NATO-0–142	23
3c		Synthetic base - diester	ISO 1817 Liquid 101	23
3d		Synthetic base - polyester	NATO-0–160 OX26	23
4a	Cleaning fluids	Solvent	Isopropyl alcohol or Ethanol	23
4c			Propanol 25 % White spirit 75 % v/v	23
4d			Methylethylketone ASTM D740	23
4e		Detergent	MIL-PRF-87937	23
4f		Sullage	5 % solution AMS1476B in water v/v	23
5a	De-icing	Runway de-icing	Inhibited potassium acetate in water, 50 %	23
5b		Aircraft de-icing on the ground	Ethylene glycol 80 % Water 20 % (AMS 1428 or Monopropylene Glycol ISO 11075) ISO 11078	23
5d		Aircraft de-icing-inflight	NATO-S-745 AL5	23
6a	Fire extinguishant	Not applicable (see Note 2)		See Note 1.
7a	Cooling	Avionic coolant	ISO 1817 Liquid 103	70

NOTE 1 Unless otherwise specified in the product standard.

NOTE 2 Fire extinguishant not assessed, see EN 3909.