



SLOVENSKI STANDARD

SIST EN 2591-315:2016

01-januar-2016

Nadomešča:

SIST EN 2591-315:2001

Aeronavtika - Elementi električnih in optičnih povezav - Preskusne metode - 315.
del: Odpornost proti tekočinam

Aerospace series - Elements of electrical and optical connection - Test methods - Part 315: Fluid resistance

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 315: Beständigkeit gegen Flüssigkeiten

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 315: Résistance aux fluides

Ta slovenski standard je istoveten z: EN 2591-315:2015

ICS:

49.060

Letalska in vesoljska
električna oprema in sistemi

Aerospace electric
equipment and systems

SIST EN 2591-315:2016

en,fr,de

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EUROPEAN STANDARD

EN 2591-315

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2015

ICS 49.060; 49.090

Supersedes EN 2591-315:1998

English Version

Aerospace series - Elements of electrical and optical connection - Test methods - Part 315: Fluid resistance

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 315 : Résistance aux fluides

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 315: Beständigkeit gegen Flüssigkeiten

This European Standard was approved by CEN on 8 June 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.

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
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 2591-315:2015) 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 May 2016, and conflicting national standards shall be withdrawn at the latest by May 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 2591-315:1998.

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 2591-315:2015 (E)**1 Scope**

This European Standard specifies the method of determining the fluid resistance of a connector, or cable accessory.

It shall be used together with EN 2591-100 and EN 3909.

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 2591-100, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 100: General*

EN 2591-101, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 101: Visual examination*

EN 2591-206, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 206: Measurement of insulation resistance*

EN 2591-408, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 408: Mating and unmating forces*

EN 2591-409, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 409: Contact retention in insert*

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

3 Test fluids

Unless otherwise specified in the Product Standard, the samples under test shall be exposed to each of the fluid types listed in Table 1 below. Each fluid shall be selected from the fluid groups in EN 3909.

Table 1 — Types of test fluid to be used

Fluid group number	Fluid family name	Test fluid type (variant)	No of fluids to be selected per test	Remarks (e.g. test temperature)
Group 1	Fuels	Hydrocarbon	1	-
		Biofuel	1	-
Group 2	Hydraulic Fluids	Mineral	1	-
		Synthetic	1	-
Group 3	Oils	Mineral	1	-
		Synthetic	1	-
Group 4	Cleaning Fluids	Optional	1	-
Group 5	De-Icing Fluids	Runway	1	-
		Aircraft	1	-
Group 6	Fire Extinguishant	-	1	- ^a
Group 7	Cooling Fluid	-	1	-

^a Due to restrictions and applicable by local laws, fire extinguishant shall not be discharged in non-critical situations.

4 Preparation of specimens

4.1 Unless otherwise specified in the relevant Technical Specification or Product Standard, specimens shall be prepared as follows to comply with Figure 1 and Figure 2.

Each specimen shall be visibly inspected for any imperfections, clean, dry and free from any contaminants that do not comprise the 'ready for use' product.

Unwired cavities shall be fitted with contacts and sealing plugs. 20 % of cavities shall be fitted with sealing plugs and for connectors with less than 5 cavities, 1 cavity shall be fitted with a sealing plug. All remaining cavities shall be fitted with wired contacts.

Wired contacts shall be fitted with sufficient cable to enable the test sample to be fully immersed in the test fluid chamber. Care shall be taken to ensure the sample is not subjected to unnecessary load or deformation (e.g. due to tough cables or cable alignment at the rear of the connector or accessory). See Figure 1.

4.2 The following details shall be stated in the Product Standard or Technical Specification:

- types of fluids (and the substance application method if different to herein);
- number of specimens (if different from one per test fluid);
- mounting method, type of cable and definition of specimen wiring;
- number of cycles;
- temperature (T_1) and duration of the first phase;
- initial measurements (if applicable);
- method according to EN 2591-206 and insulation resistance value;
- temperature (T_2) and duration for the third phase;
- final measurements and requirements (if applicable).

5 Method

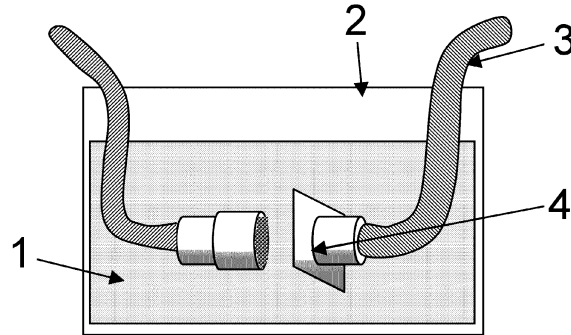
5.1 Initial measurements (if applicable in the Product Standard or Technical Specification)

Measurements shall be carried out as specified in the Product Standard or Technical Specification.

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5.2 Procedure

Each specimen shall be subjected to only one of the specified fluids. A fluid shall be selected from each of the test fluid categories in accordance with Table 1 and EN 3909.



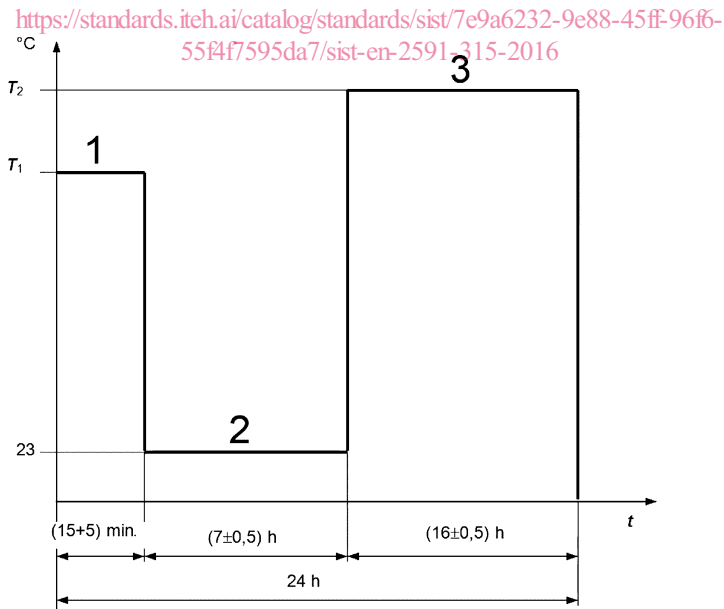
Key

- 1 Test fluid
- 2 Test chamber
- 3 Sufficient cable (when fitted) to avoid undue strain on the assembly
- 4 Test sample(s). Mated or unmated in accordance with the Product Standard or Technical Specification requirements

Figure 1 — Typical test set-up

If the test fluid is a gas at the designated test temperature, the fluid shall be omitted from the test (unless otherwise instructed by the test authority). All test instructions shall include all commensurate health and safety instructions.

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Key

- 1 First phase
- 2 Second phase
- 3 Third phase

Each cycle comprises three phases.

Figure 2 — Test cycle

5.2.1 First phase

Fluids: immersion (unless otherwise specified in the Technical Specification or Product Standard).

Specimens shall be unmated.

The specimens and the fluid shall be brought to the temperature specified (T_1).

Fully immerse the specimens for (15 ± 5) min at the test temperature.

The temperature of the fluid shall not exceed the temperature limit of the specimen. The upper rated temperature limit of the specimen shall be considered the maximum test temperature if there is a conflict.

NOTE 1 The flash point and the maximum temperature of the test fluid according to EN 3909 must be observed.

NOTE 2 If more viscous substances with the consistency of grease, etc., are instructed in the Technical Specification or Product Standard their application shall be:

Grease: application

The specimens shall be mated unless otherwise specified.

The grease shall be spread in a fine film with a brush all over the specimens.

The specimens and the grease shall be brought to the specified temperature (T_1).

The specimens shall then be placed in an oven for (15 ± 5) min.

5.2.2 Second phase

Fluids

The specimens shall be removed from the fluid and stored at ambient conditions for $(7 \pm 0,5)$ h.

The specimens shall be allowed to drain, to remove trapped fluid (not wiped dry), in still air during storage.

Greases

The specimens shall be unmated and stored at ambient conditions for $(7 \pm 0,5)$ h. If the grease has become fluid it shall be allowed to drain, to remove trapped fluid (not wiped dry), in still air during storage.

5.2.3 Third phase

The specimens shall be mated and placed in a pre-heated oven (the oven air shall be circulated and renewed), the samples shall be subjected to the specified temperature (T_2) for $(16 \pm 0,5)$ h, unless otherwise specified.

If the third phase temperature is not specified it shall be (65 ± 2) °C.

NOTE If the test is carried out at a temperature exceeding the flash point, appropriate safety measures shall be taken.