SLOVENSKI STANDARD
SIST EN 2591-314:2001

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Aerospace series - Elements of electrical and optical connection - Test methods - Part 314: Immersion at low air pressure

Aerospace series - Elements of electrical and optical connection - Test methods - Part 314: Immersion at low air pressure

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 314: Tauchen bei Unterdruck

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Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 314: Immersion a basse pression d'air

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49.060	Letalska in vesoljska elektriļ na oprema in sistemi	Aerospace electric equipment and systems

SIST EN 2591-314:2001 **en**

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EUROPEAN STANDARD
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EN 2591-314

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English version

Aerospace series - Elements of electrical and optical connection - Test methods - Part 314: Immersion at low air pressure

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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 Central Secretariat has the same status as the official versions.

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Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries 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 AECMA, 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of an identical text or by endorsement, at the latest by April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This standard specifies a method of assessing the sealing ability of elements of connection immersed in salt water and exposed to low air pressure.

It shall be used together with EN 2591.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 2591	Aerospace series - Elements of electrical and optical connection - Test methods - 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 2591-207	Aerospace series - Elements of electrical and optical connection - Test methods - Part 207: Voltage proof test
EN 2591-311	Aerospace series - Elements of electrical and optical connection - Test methods - Part 311: Low air pressure [1]

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3 Preparation of specimens

3.1 Specimens shall be prepared according to the technical specification.

Unless otherwise specified, 50 % of cables shall be of the minimum diameter, 50 % of the maximum diameter, evenly distributed.

Unwired cavities shall be fitted with filler plugs.

A conductor shall be connected to the housing (shell) to allow measurements to be carried out. For specimens with an unprotected cable termination area (e.g. with solder contacts) a means of protection shall be used.

3.2 Unless specified in the technical specification, the following details shall be stated:

- specimens mated or unmated and fitted with protective cover;
- mounting method, type of cable and definition of specimen wiring;
- initial measurements and requirements (if applicable);
- method according to EN 2591-206 and minimum insulation resistance value;
- method according to EN 2591-207 and voltage value;
- pressure value if different from that given in 5.2.2.1;
- final measurements and requirements (if applicable).

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1) Published as AECMA Prestandard at the date of publication of this standard

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4 Apparatus

4.1 Low air pressure chamber

It shall be of sufficient size to house the container holding the specimen immersed in the salt solution. Its volume shall not exceed 1 m^3.

The low air pressure chamber shall also be provided with a window for visual observation of the specimens.

A vacuum pump shall be capable of maintaining the specified pressure.

4.2 Salt solution

Salt solution shall be prepared by dissolving 5 % by mass of sodium chloride in deionized water.

5 Method

5.1 Initial measurements and requirements (if applicable)

The initial measurements shall be carried out as specified.

5.2 Test procedure

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5.2.1 Immersion

The specimens shall be fully immersed in the solution.

The cables shall be taken out along the specimen axis without any mechanical stress and arranged to project from the solution. Unsealed cable ends shall be located inside the chamber.

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5.2.2 Low air pressure cycle

5.2.2.1 The chamber pressure shall be reduced from ambient to 2 kPa, unless otherwise specified, within 5 min to 15 min and maintained for $(30\ ^{+5}_{0})$ min.

5.2.2.2 The chamber pressure shall then be increased to ambient within 1 min and maintained for $(30\ ^{+5}_{0})$ min.

This constitutes one cycle (see figure 1).

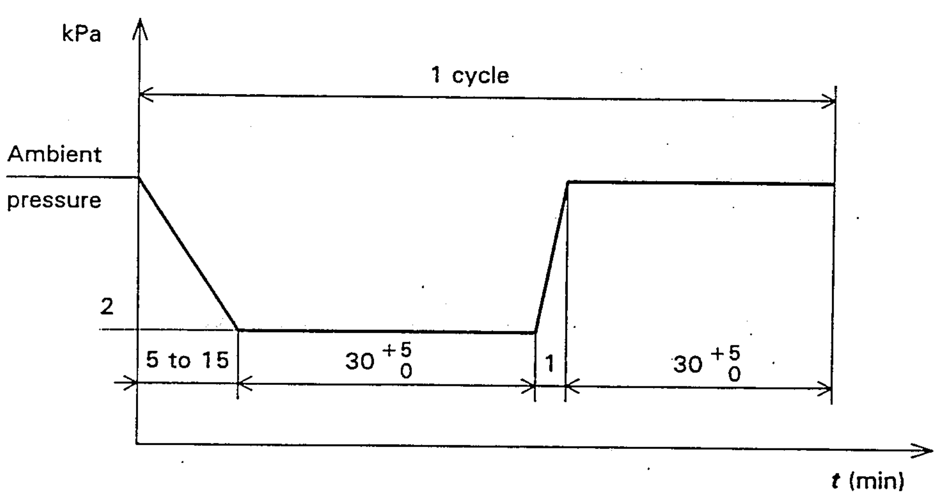

Figure 1 - Test cycle

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5.2.2.3 Three cycles shall be carried out.

The specimens shall remain in the salt solution during measurements.

The container with the immersed specimens may be removed from the chamber between two cycles.

5.3 Final measurements and requirements

After the third cycle, and while the specimens are still immersed, they shall be subjected to the following test sequence:

- EN 2591-206;
- EN 2591-207: the test voltage shall be applied for a minimum of 5 s.

Specimens shall then be removed from the salt solution, drained, carefully unmated and be tested to EN 2591-101 with particular attention to salt water ingress and the condition of the seals.

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