



SLOVENSKI STANDARD SIST EN 2591-303:2001

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Aerospace series - Elements of electrical and optical connection - Test methods - Part 303: Cold/low pressure and damp heat

Aerospace series - Elements of electrical and optical connection - Test methods - Part 303: Cold/low pressure and damp heat

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 303: Kälte/niedriger Luftdruck und feuchte Wärme

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 303: Froid/basse pression et chaleur humide

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Ta slovenski standard je istoveten z: EN 2591-303:1997

ICS:

49.060 Štejni in optični elementi za povezavo električnih in optičnih sistemov v letalski in vesoljski opremi in sistemih
Aerospace electric equipment and systems

SIST EN 2591-303:2001

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EUROPEAN STANDARD

EN 2591-303

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1997

ICS 49.060

Descriptors: aircraft industry, aircraft equipment, connecting equipment, test

English version

Aerospace series - Elements of electrical and optical connection - Test methods - Part 303: Cold/low pressure and damp heat

Série aérospatiale - Organes de connexion électrique et
optique - Méthodes d'essais - Partie 303: Froid/basse
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Kälte/niedriger Luftdruck und feuchte Wärme

This European Standard was approved by CEN on 22 June 1997.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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.

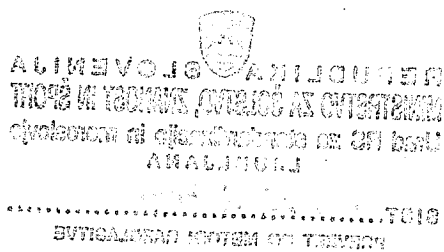
This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.

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 (cold/low pressure and damp heat) to verify the long-term stability of elements of connection exposed to ionisation phenomena.

It shall be used in conjunction 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 2591-206	Aerospace series - Elements of electrical and optical connection - Test methods - Part 206: Measurement of insulation resistance

3 Preparation of specimens

3.1 The specimens shall be prepared according to the technical specification.

If the rear face of the specimens requires protection (e.g. rear face of an hermetic connector) the protective device shall meet the requirements of the technical specification.

If applicable, the test shall be carried out on mated or unmated specimens. Unmated specimens shall be fitted with protective covers.

Unwired cavities shall be fitted with filler plugs.

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

- specimens mated or unmated (if applicable);
- mounting method, type of cable, position and definition of specimen wiring;
- measurement method for test EN 2591-206;
- initial measurements and requirements (if applicable);
- minimum temperature;
- number of cycles;
- insulation resistance value.

4 Method

4.1 Climatic preconditioning

The specimens shall be placed in a test chamber the temperature of which shall be raised to 70 °C within 2 h and maintained for 20 h to remove any trace of moisture.

The temperature shall then be reduced to 40 °C within 2 h.

4.2 Initial measurements (if applicable)

They shall be carried out as specified while the specimens are in the test chamber in the specified position.

4.3 Procedure

Method A: single chamber (see figure 1)

Method B: two chambers (see figure 2)

Throughout the test, a 300 V d.c. potential shall be applied between the two groups of contacts and a leakage current monitoring system shall be provided. Leakage current shall not exceed 2 mA between the two groups of contacts.

4.3.1 Method A

After preconditioning, ambient conditions shall be restored to $(23 \pm 5) ^\circ\text{C}$, with a relative humidity of 40 % to 60 % within 2 h and maintained for 1 h.

Within 16 h, the temperature shall be reduced to the minimum of the specified climatic category. The pressure shall be reduced to a value of $(5,5 \pm 0,1) \text{ kPa}$ corresponding to an altitude of approximately 20 000 m. This pressure and the minimum temperature shall be maintained for 4 h.

Ambient pressure shall then be restored and the temperature raised to $(40 \pm 2) ^\circ\text{C}$ within 5 h. The relative humidity shall be adjusted so that its value is $(95 \pm \frac{2}{3}) \%$ when $40 ^\circ\text{C}$ temperature is reached.

This temperature and humidity shall be maintained for 16 h.

This constitutes one cycle. The number of cycles shall be as specified.

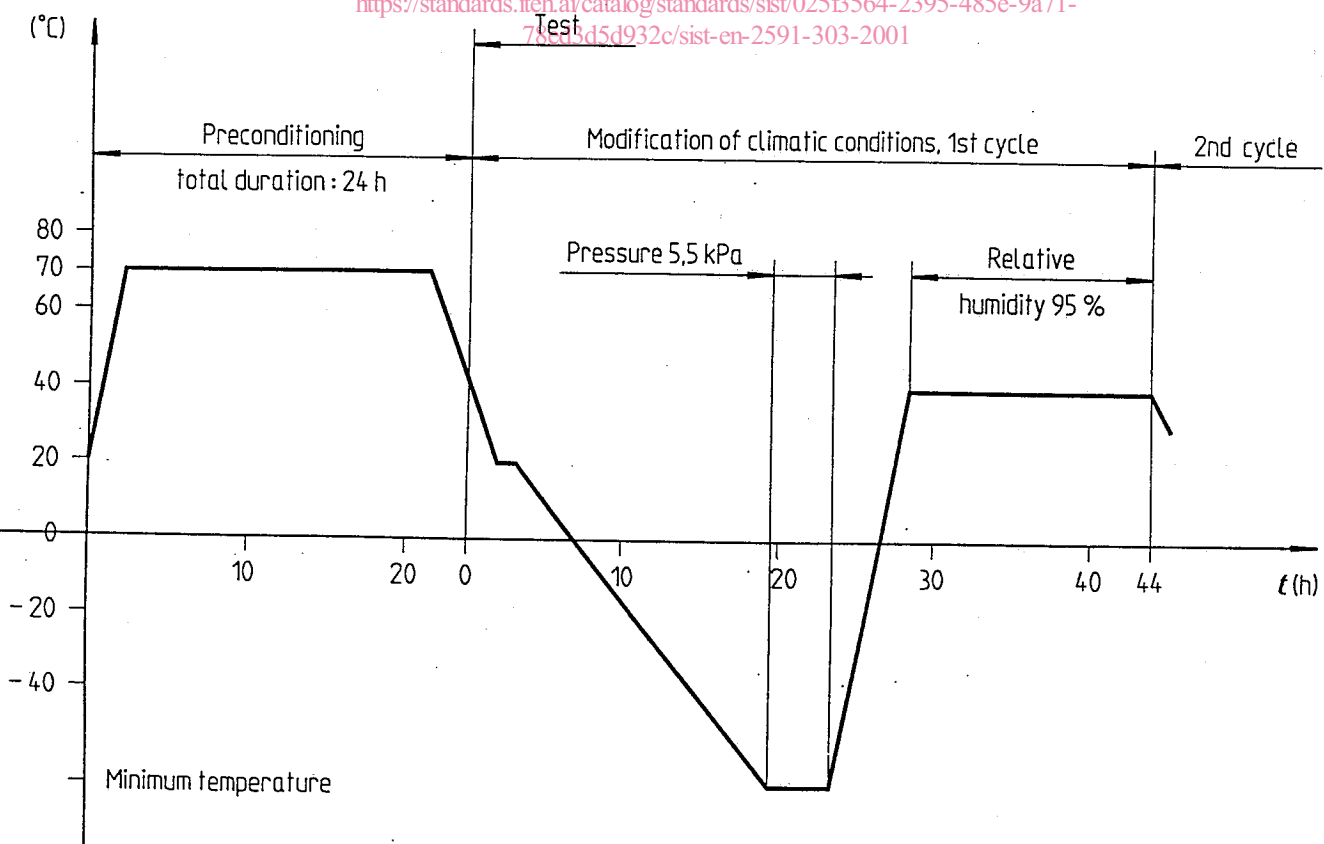


Figure 1 - Test sequence

4.3.2 Method B

This procedure shall apply only when the equipment described for method A is not available.

The first chamber shall be used for dry heat, cold and low pressure; the second chamber for damp heat.

The specimens shall be transferred from the first to the second chamber only when ambient conditions are reached in the cycle.

The transfer shall take place in less than 1 h (see figure 2).

This constitutes one cycle. The number of cycles shall be as specified.

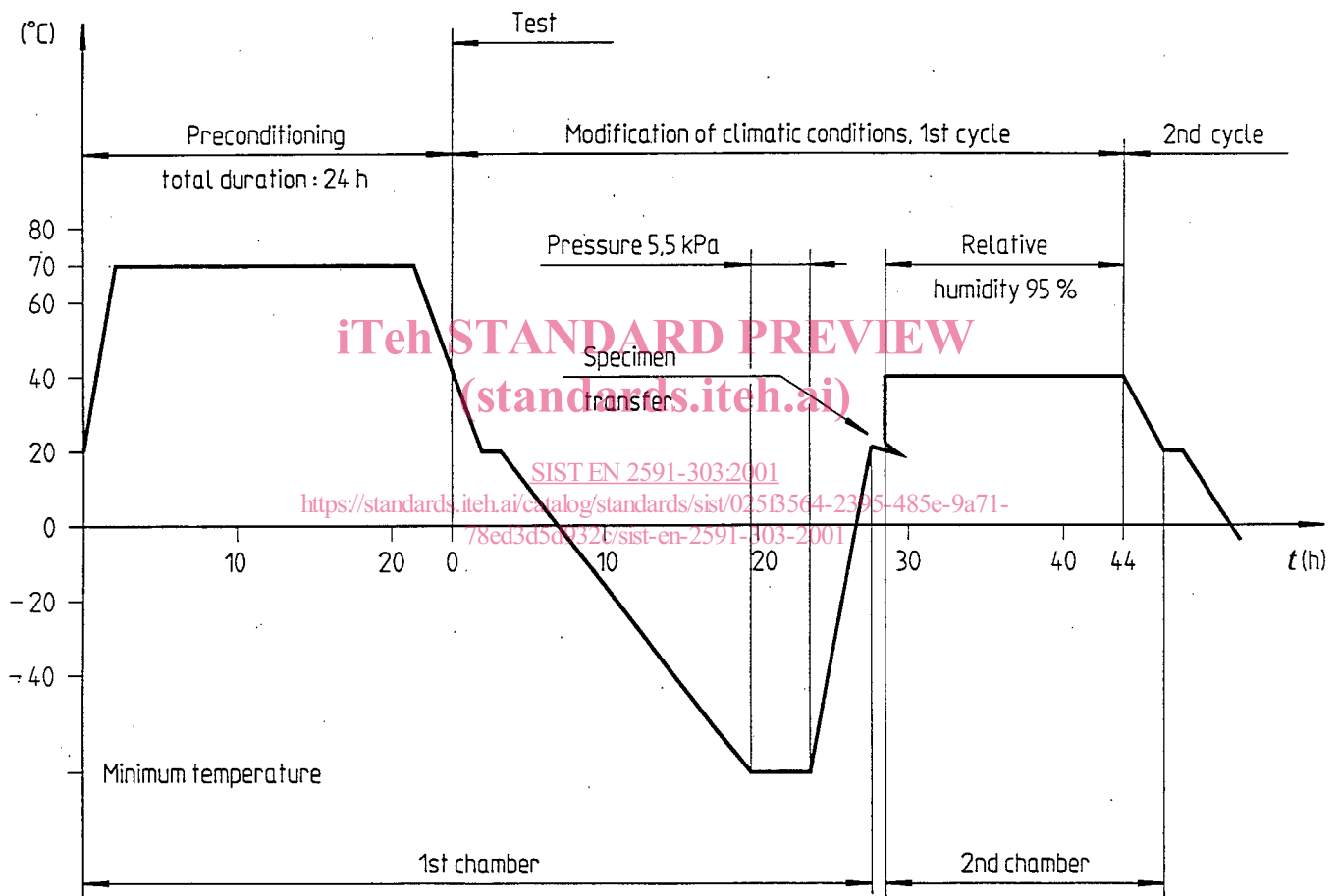


Figure 2 - Test sequence

5 Requirement

During the last hour of the last cycle, the insulation resistance shall be measured (EN 2591-206). Its value shall not be smaller than the specified value.