



**SLOVENSKI STANDARD**  
**SIST EN 2591-301:2001**  
**01-januar-2001**

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**Aerospace series - Elements of electrical and optical connection - Test methods - Part 301: Endurance at temperature**

Aerospace series - Elements of electrical and optical connection - Test methods - Part 301: Endurance at temperature

Luft- und Raumfahrt - Elektrische und optische Prüfverfahren - Teil 301: Temperaturbeständigkeit

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 301: Endurance en température

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**Ta slovenski standard je istoveten z: EN 2591-301:1996**

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**ICS:**

49.060 Številni sistemi za letalstvo in zračne sile  
Aerospace electric equipment and systems

**SIST EN 2591-301:2001 en**

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EUROPEAN STANDARD

EN 2591-301

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 1996

ICS 49.060

Supersedes EN 2591-C1:1992

Descriptors: aerospace industry, aircraft equipment, elements of electrical and optical connection, test

English version

**Aerospace series - Elements of electrical and  
optical connection - Test methods - Part 301:  
Endurance at temperature**

Série aérospatiale - Organes de connexion  
électrique et optique Méthodes d'essais -  
Partie 301: Endurance en température

Luft- und Raumfahrt - Elektrische und optische  
Verbindungselemente - Prüfverfahren - Teil 301:  
Temperaturbeständigkeit

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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.

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**CEN**

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).

The alphanumerical designation of the parts of EN 2591 has been abandoned for a numerical designation in line with the Internal Regulations of CEN/CENELEC. This European Standard is the integral reproduction of the European Standard EN 2591-C1 after application of this decision, without any other modification than the change in numbering.

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 August 1996, and conflicting national standards shall be withdrawn at the latest by August 1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom

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## 1 Scope

This standard specifies the methods to assess the endurance at temperature of an element of connection. 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 2591-202	Aerospace series - Elements of electrical and optical connection - Test methods - Part 202 : Contact resistance at rated current
EN 2591-204	Aerospace series - Elements of electrical and optical connection - Test methods - Part 204 : Discontinuity of contacts in the microsecond range
EN 2591-205	Aerospace series - Elements of electrical and optical connection - Test methods - Part 205 : Housing (shell) electrical continuity
EN 2591-206	Aerospace series - Elements of electrical and optical connection - Test methods - Part 206 : Measurement of insulation resistance
EN 2591-409	Aerospace series - Elements of electrical and optical connection - Test methods - Part 409 : Contact retention in insert <sup>1)</sup>

## 3 Preparation of the specimens

**3.1** They shall be wired and mated, the contacts shall be connected in series.

The cross-section and the type of wires interconnecting the contacts shall be chosen in relation to the anticipated test current and temperature.

The length of the wire between two contacts shall be 250 mm to 300 mm. The length of the supply lead shall be determined in relation to the test fixture.

The specimen shall be fitted with temperature pick-ups.

**3.2** Unless indicated in the technical specification or EN 2591, the following details shall be specified :

- cross-section and type of the cable;
- fitting and sensitivity of the temperature pick-ups;
- maximum operating temperature;
- duration of the test;
- methods and requirements for the intermediate and final measurements;
- method A or B - For method B specify if the test under load is applicable.

<sup>1)</sup> Published as AECMA Prestandard at the date of publication of the present standard

## 4 Method

### 4.1 Procedure

- Method A : with flow of current;
- Method B : without flow of current

The pick-ups used shall not affect the heating of the specimens nor lead to errors of measurement.

The specimens shall be placed horizontally in a chamber, the temperature of which is maintained :

- for method A : at  $(70 \pm 5)$  % of the maximum operating temperature specified;
- for method B : at  $\pm 3$  K of the maximum operating temperature specified.

#### 4.1.1 Method A

The current shall be applied to the specimen and increased until the maximum operating temperature specified is approached. There shall be no further increase in current until thermal stability is attained. During these adjustments the maximum operating temperature or the current specified shall in no case be exceeded.

If the temperature rise due to the current flowing through the specimen does not cause it to reach its maximum operating temperature, the chamber temperature shall be increased until the maximum operating temperature of the specimen is reached. In any case, the current shall be maintained throughout the test.

Should the maximum operating temperature of the specimen be exceeded by 5 % under normal test conditions, the test shall be stopped and the specimen rejected.

#### 4.1.2 Method B

The test shall be carried out, without flowing of current, at the maximum operating temperature and for the period specified.

If required, a male contact and the corresponding female contact are crimped onto a copper-plated steel wire. Before starting the test, the position of these contacts in the connector is measured under a load of 9 N. The connectors are then mated and a tensile load equal to half of that specified for test EN 2591-409 is applied to the male and the female contact, through which a current of 100 mA passes during the whole test.

One contact of each size shall be tested on various connectors.

### 4.2 Measurements during the test

If required, the insulation resistance at elevated temperature shall be measured in accordance with test EN 2591-206.

For the contacts under load in method B, the measurement of contact discontinuities shall be carried out in accordance with test EN 2591-204.

### 4.3 Recovery

The period of recovery is one hour, unless otherwise stated.

### 4.4 Final measurements (if applicable)

The specimens shall be submitted to the tests in the following order :

- EN 2591-202 - Contact resistance at rated current;
- EN 2591-205 - Housing (shell) electrical continuity, if applicable;
- EN 2591-206 - Measurement of insulation resistance;
- EN 2591-409 - Contact retention in insert;
- EN 2591-101 - Visual examination.

For the contacts under load in method B, the position of the contacts shall be checked after the test.

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