SLOVENSKI STANDARD
SIST EN 2591-318:2001

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Aerospace series - Elements of electrical and optical connection - Test methods - Part 318: Fire-resistance

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Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 318: Feuerbeständigkeit

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 318: Résistance au feu

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

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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.

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.

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of an identical text or by endorsement, at the latest by December 1998, and conflicting national standards shall be withdrawn at the latest by December 1998.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.

1 Scope

This standard specifies a method of determining fire-resistance of elements 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.

ISO 2685	Aircraft - Environmental conditions and test procedures for airborne equipment - Resistance to fire in designated fire zones
EN 2234	Aerospace series - Fire-resisting electrical cables - Technical specification [1]
EN 2591	Aerospace series - Elements of electrical and optical connection - Test methods - General

3 Preparation of specimens

3.1 Specimens shall be prepared according to the technical specification.

Specimens shall be wired with cable bundles 450 mm min. in length. There shall be at least one circuit for each contact size. In each circuit, the contacts shall be connected in series.

In the case of high numbers of contacts of the same size, two circuits may be required, one connecting in series the even-numbered contacts and the other the odd-numbered contacts.

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

- mounting method, type of cable (e.g. EN 2234: fire-resistant) and definition of specimen wiring;
- initial measurements (if applicable);
- value of leakage current (phase 1);
- nominal current to be applied to contacts (phase 1);
- number and position of burners.

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

4 Apparatus

4.1 The mated specimens shall be mounted on a steel sheet representative of a firewall as shown in figure 1.

The assembly shall be rigidly secured to a vibration generator.

4.2 The circuits shall be connected to an electrical installation as shown in figure 2.

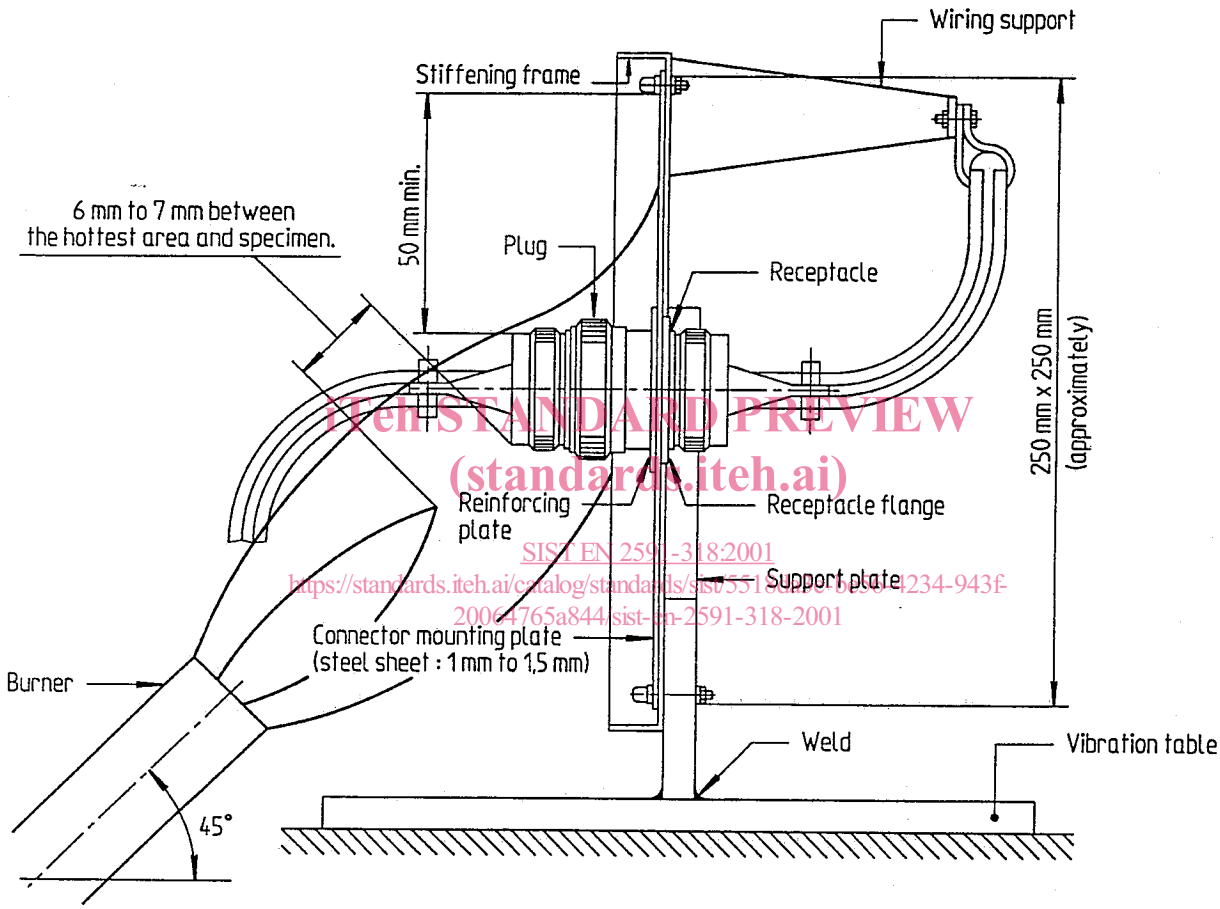

Figure 1 - Test setup

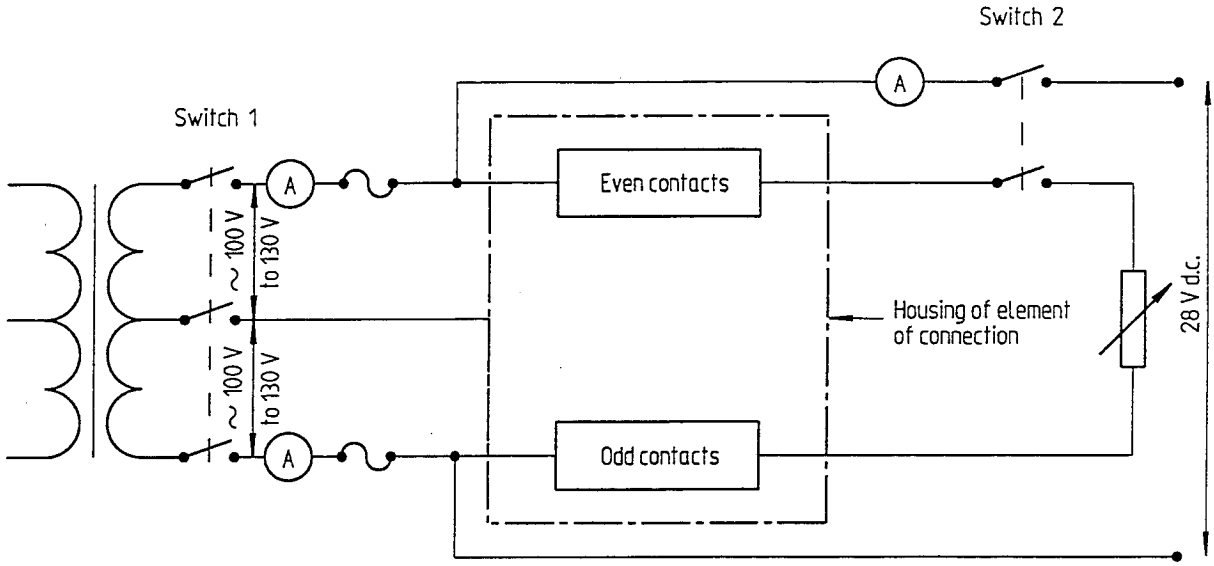

Figure 2 - Basic diagram

4.3 Flame

In accordance with ISO 2685

The temperature of the flame shall be checked before and after the test according to ISO 2685.

4.4 The burner shall be positioned as shown in figure 1.

For large size specimens, several burners shall be installed as specified so that the specimens shall be wholly enveloped in flame.

5 Method

5.1 Initial measurements (if applicable)

They shall be carried out as specified.

5.2 Procedure

The specimens shall be simultaneously exposed to the flame and vibrations at a constant frequency between 30 Hz and 60 Hz of 100 m/s^2 acceleration throughout the tests.

5.2.1 Phase 1

During the first 5 min, the contacts shall carry a constant current of the specified nominal value: switch 2 is closed, switch 1 is open (see figure 2).

After the fifth minute, a potential of 200 V r.m.s. to 260 V r.m.s., 40 Hz to 60 Hz, shall be applied for 1 min between each of the circuits and 100 V to 130 V potential between each circuit and the housing (shell): switch 1 is closed, switch 2 is open (see figure 2).

5.2.2 Phase 2

The flame shall be applied for 14 min, with no voltage on the circuits.

5.3 Requirements

5.3.1 Phase 1

There shall be no electrical discontinuity during the first 5 min and no leakage current higher than the specified value during the sixth minute.

5.3.2 Phases 1 and 2

No flame shall be visible on the side of the specimen not exposed to the burner.