SLOVENSKI STANDARD
SIST EN 2591-402:2001

01-januar-2001

Aerospace series - Elements of electrical and optical connection - Test methods - Part 402: Shock

Aerospace series - Elements of electrical and optical connection - Test methods - Part 402: Shock

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 402: Stöße

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 402: Chocs

Ta slovenski standard je istoveten z: **EN 2591-402:1998**

ICS:

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

SIST EN 2591-402:2001 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 2591-402

August 1998

ICS 49.060

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

English version

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This European Standard was approved by CEN on 23 February 1998.

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.

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 February 1999, and conflicting national standards shall be withdrawn at the latest by February 1999.

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 assessing the ability of elements of connection to withstand mechanical shock of a specified severity.

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 2591-204	Aerospace series - Elements of electrical and optical connection - Test methods - Part 204: Discontinuity of contacts in the microsecond range
EN 2591-408	Aerospace series - Elements of electrical and optical connection - Test methods - Part 408: Mating and unmating forces [1)]

3 Preparation of specimens

3.1 Specimens shall be prepared according to the technical specification.

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

- mounting method, type of cable and definition of specimen wiring;
- initial measurements (if applicable);
- pulse shape (method A or B);
- test severity;
- number of axes, if other than three;
- number of shocks in each direction;
- final measurements (if applicable).

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

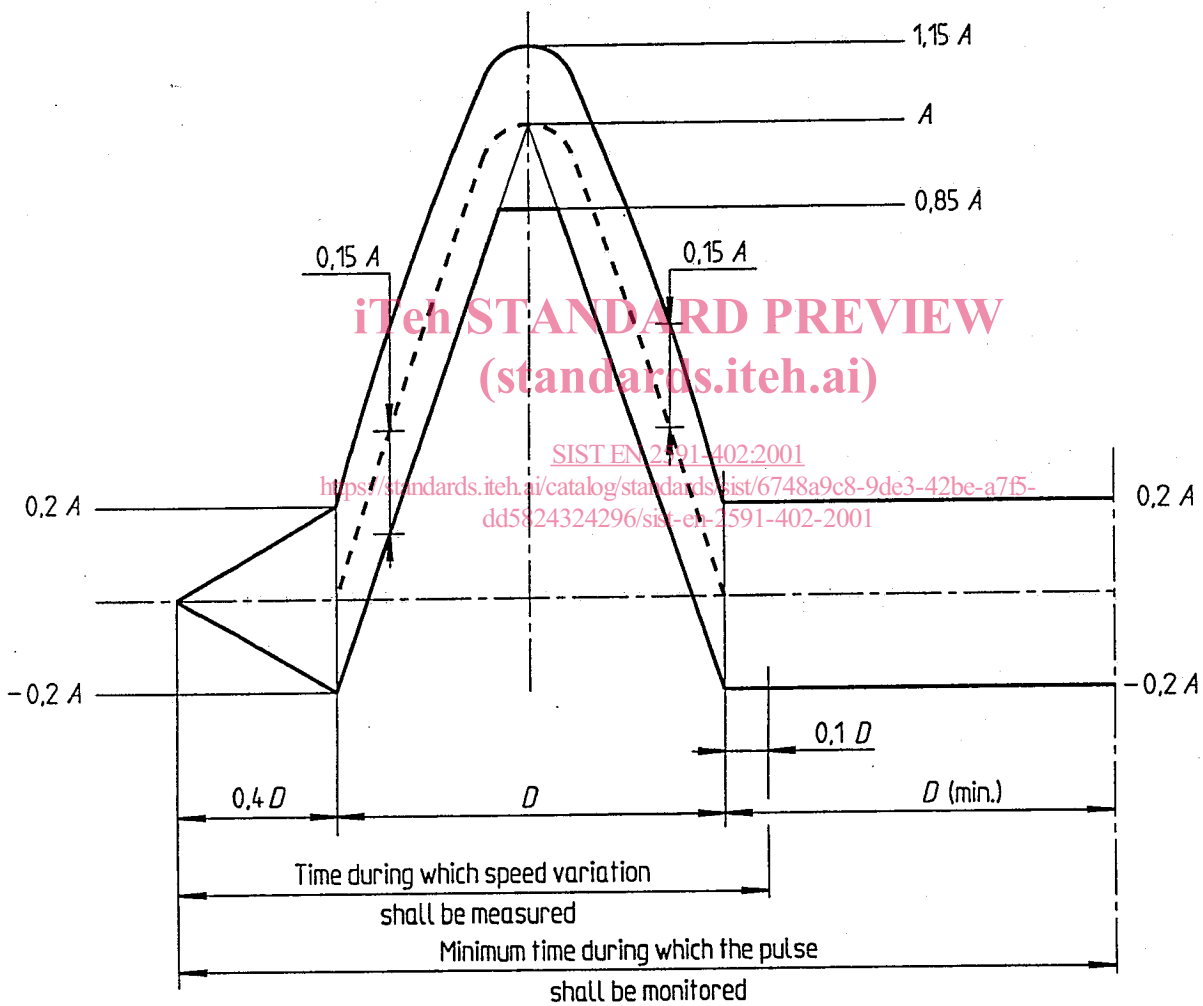
4 Apparatus

The characteristics of the shock apparatus and mounting fixtures shall comply with the following requirements when loaded for the test.

4.1 Shock characteristics

The shock apparatus shall be capable of generating shocks of half sine wave shape (method A) or a final peak saw-tooth pulse (method B) as shown in figures 1 and 2 within tolerances as defined by the area shown within solid lines.

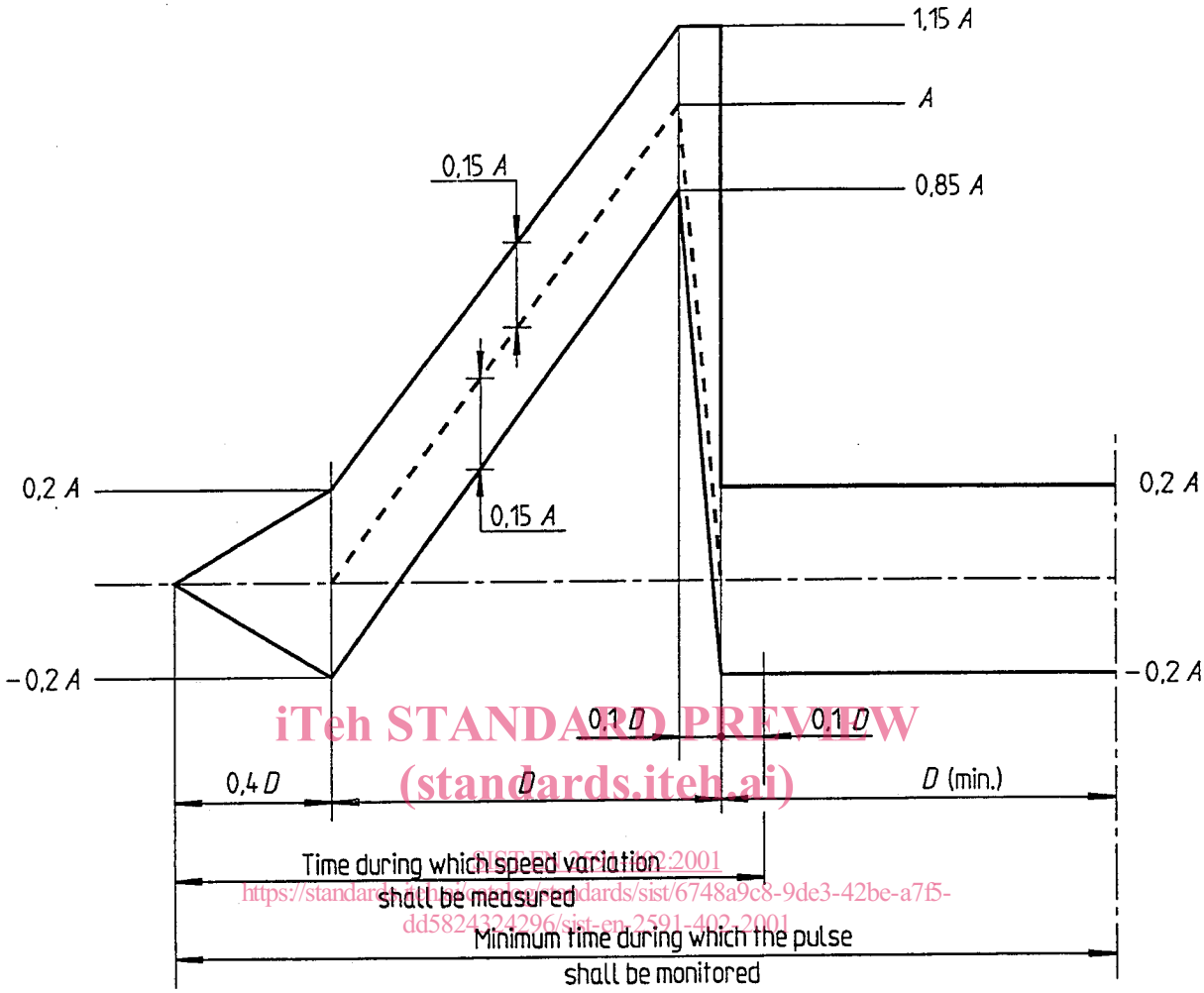
The true value of the velocity change shall be within ± 10 % of the nominal pulse.



−·−·−·− Reference line corresponding to pre-pulse conditions [1)]
---------- Nominal pulse
———— Tolerances
D = Duration of nominal pulse
A = Peak acceleration value of nominal pulse

1) The reference line shall not differ more than ± 0,05 *A* or ± 9,8 m/s² (equivalent to ± 1 *g*), whichever is the greater, from zero acceleration.

Figure 1: Half sinusoidal pulse - Method A



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D	=	Duration of nominal pulse
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1) The reference line shall not differ more than ± 0,05 *A* or ± 9,8 m/s² (equivalent to ± 1 *g*), whichever is the greater, from zero acceleration.

Figure 2: Final peak saw-tooth pulse - Method B

4.2 Mounting

The specimens shall be mounted as specified.

5 Method

5.1 Initial measurements (if applicable)

They shall be carried out as specified.

5.2 Severity

See table 1.

Table 1

Severity		Acceleration (peak value) m/s²	Duration D ms	Velocity change m/s	
Method A	Method B			Method A	Method B
30	30	30	11	2,06	1,62
50	50	50	11	3,43	2,69
100	100	100	6	3,74	2,94
300	Not applicable	300	3	5,69	Not applicable

5.3 Procedure

The specimens shall be subjected to a specified number of successive shocks along the specified axes and in each direction.

Unless otherwise specified, measurements to EN 2591-204 (Method B) shall be carried out on the contacts and (if applicable) shielding connections.

No discontinuity greater than 1 µs shall be observed.

5.4 Final measurements (if applicable)

The specimens shall be subjected to the following test sequence:

- EN 2591-101;
- EN 2591-408.