SLOVENSKI STANDARD
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Aeronavtika - Elementi električnih in optičnih povezav - Preskusne metode - 402. del: Udarec

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

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ICS:

49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

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EUROPEAN STANDARD

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English Version

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

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

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

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Foreword

This document (EN 2591-402:2012) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries 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 ASD, 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of an identical text or by endorsement, at the latest by January 2013, and conflicting national standards shall be withdrawn at the latest by January 2013.

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This document supersedes EN 2591-402:1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies a method of assessing the ability of elements of connection to withstand mechanical shock of a specified severity.

It should be used together with EN 2591-100.

This test is based on EN 60068-2-27.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2591-100, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 100: 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*

EN 60068-2-27:2009, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock (IEC 60068-2-27:2008)*

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).

4 Apparatus

4.1 General

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

4.2 Shock characteristics

The shock apparatus shall be capable of generating shocks as follows:

— method A: half sine wave shape as shown in Figure 2 of EN 60068-2-27:2009.

or

— method B: final peak saw-tooth pulse as shown in Figure 1 of EN 60068-2-27:2009.

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

The specimens shall be mounted as specified in the technical specification.

5 Method

5.1 Initial measurements (if applicable)

They shall be carried out as specified in the technical specification.

5.2 Severity

The pulse shape and severity shall be as stated in the technical specification (See Table 1).

Table 1

Severity		Acceleration (peak value) g_n	Duration ms	Velocity change m/s	
Method A	Method B			Method A	Method B
30	30	30	11	2,1	1,6
50	50	50	11	3,4	2,7
100	100	100	6	3,7	2,9
300	Not applicable	300	3	5,7	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.