IEC 60512-7-2

Edition 1.0 2011-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Connectors for electronic equipment – Tests and measurements – Part 7-2: Impact tests (free connectors) – Test 7b: Mechanical strength impact

Connecteurs pour équipements électroniques – Essais et mesures – Partie 7-2: Essais d'impact (fiches) – Essai 7b: Résistance mécanique aux chocs

IEC 60512-7-2:2011

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

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FOREWORD

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International Standard IEC 60512-7-2 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This standard cancels and replaces Test 7b of IEC 60512-5, issued in 1992. The structure of the test documents in the IEC 60512 series is explained in IEC 60512-1-100.

The text of this standard is based on the following documents:

FDIS	Report on voting
48B/2258/FDIS	48B/2269/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 60512 series, under the general title *Connectors for electronic equipment – Tests and measurements*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 7-2: Impact tests (free connectors) – Test 7b: Mechanical strength impact

1 Scope and object

This part of IEC 60512, when required by the detail specification, is used for testing connectors within the scope of technical committee 48. It may also be used for similar devices when specified in a detail specification.

The object of this standard is to detail a standard test method to assess the ability of a free connector on the end of a cable or wire bundle to withstand impacts it could receive when dropped onto a hard surface.

2 Normative references

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

IEC 60512-1-1: *Connectors for electronic equipment – Tests and measurements – Part 1-1: General examination, Test 1a: Visual examination*

3 Preparation

3.1 Preparation of the specimen

The specimen shall consist of a free connector or a similar component with its accessories fitted in the normal manner and wired as used in the normal application.

The specimen shall be prepared in accordance with the detail specification.

Unless otherwise specified, the specimen shall be pre-conditioned at a temperature between 15 °C and 35 °C and a RH between 25 % and 75 % RH during 48 h.

If the component is normally provided for use with different types of cables, the thinnest and/or most flexible type shall be used. The length of the cable or wire bundle shall allow the rear of the specimen to be (2 250 ± 10) mm from the point of attachment.

3.2 Equipment

A steel plate 300 mm × 500 mm of 25 mm thickness shall be positioned so that the component under test will fall onto it.

3.3 Mounting

The specimen shall be attached in an appropriate manner at a distance of (2 250 ± 10) mm from the rear of the component so that the specimen may swing freely from a horizontal to a vertical position as shown in Figure 1.

NOTE An appropriate manner may be the attachment to a swivel. In many cases, however, simply attaching to a hook may be sufficient.

The specimen shall be attached at one of the following preferred heights:

(2 000 ± 10) mm
(1 750 ± 10) mm
(1 500 ± 10) mm
(1 250 ± 10) mm
(1 000 ± 10) mm
(750 ± 10) mm
(500 ± 10) mm

4 Test method

Dimensions in millimetres

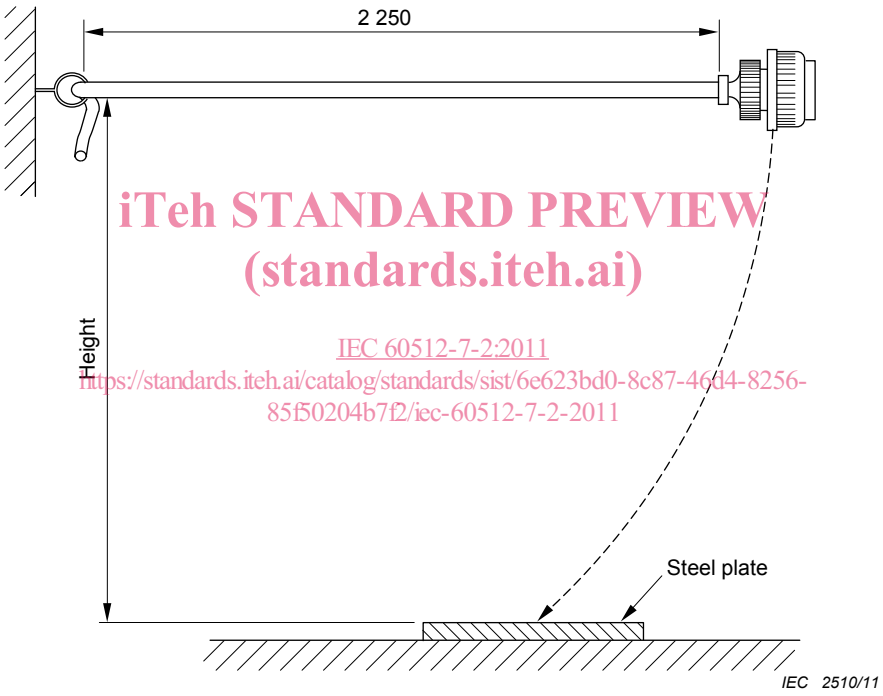

Figure 1 – Example of mounting arrangement

The specimen, attached at the specified height, shall be held in a horizontal position in an attitude as specified and dropped on to the steel plate. This cycle shall be repeated for a total number of 3 times unless otherwise specified in the detail specification.

NOTE For guidance, IEC 60068-2-31:2008 may be referenced.

5 Test requirements

The component shall be visually examined according to IEC 60512-1-1, test 1a. There shall be no broken parts or damage that would impair operation.

6 Details to be specified

When this test is required by the detail specification, the following details shall be specified:

a) preparation and pre-conditioning of the specimen;
b) type of accessory, when required;
c) cable or wire to be used;
d) test ambient conditions, if other than standard atmospheric conditions;
e) height or heights from which the component is to be dropped;
f) number of dropping cycles at each height;
g) change of orientation of the sample (e.g. rotation over 45 °) after each drop, if applicable;
h) operational tests and requirements;
i) attitude of the specimen;
j) any deviation from the standard test method.

Bibliography

IEC 60068-2-31:2008: *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60512-1: *Connectors for electronic equipment – Tests and measurements – Part 1: General*

IEC 60512-1-100: *Connectors for electronic equipment – Tests and measurements – Part 1-100: General – Applicable publications*

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