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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Connectors for electronic equipment – Tests and measurements – Part 7-1: Impact tests (free connectors) – Test 7a: Free fall (repeated)

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Connecteurs pour équipements électroniques – Essais et mesures – Partie 7-1: Essais d'impact (fiches) – Essai 7a: Chute libre (essai répété)

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CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 7-1: Impact tests (free connectors) – Test 7a: Free fall (repeated)

FOREWORD

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International Standard IEC 60512-7-1 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 7a of IEC 60512-5, issued in 1992. The structure of IEC 60512 series is explained in IEC 60512-1-100.

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

CDV	Report on voting
48B/2016/CDV	48B/2107/RVC

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 3.

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- withdrawn,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
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CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 7-1: Impact tests (free connectors) – Test 7a: Free fall (repeated)

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 define a standard test method to assess the ability of a connector to withstand the impacts it would receive when dropped repeatedly.

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.

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

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ISO 48:2007, *Rubber, vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

3 Preparation of the specimen

Unless otherwise specified, the specimen shall not be mounted or wired, but shall be fitted with normal accessories (e.g. hoods, cable glands) according to the detail specification.

4 Test method

The test shall be executed by means of a rotating barrel as described in Clause 5. During a test not more than one sample shall be present in the barrel.

The barrel turns at a rate of approximately 5 rev/min.

The total number of revolutions (the number of falls is twice the number of revolutions) shall be according to the detail specification.

NOTE (Detail) specifications may define different numbers of revolutions for specimens with a different mass.

5 Test equipment

The specimen shall be tested in a tumbling barrel as shown in Figure 1.

Where a large number of specimens has to be tested, the barrel may contain a number of sections, one specimen being placed in each section, so that simultaneous testing may be carried out.

The width of each section, W, is not specified but should preferably be between 200 mm and 300 mm, depending on the size of the specimen.

Each compartment in which the specimen rests between falls is backed by a wedge-shaped piece made of chip resistant rubber with a hardness of 80 ± 20 IRHD, as defined in ISO 48, and the sliding surfaces of that same compartment are made of smooth, hard plastics laminated sheet.

The rotating barrel is designed so that the shaft does not protrude into the interior.

The rotating barrel is provided with an aperture with a lid which may be made of transparent acrylic material.

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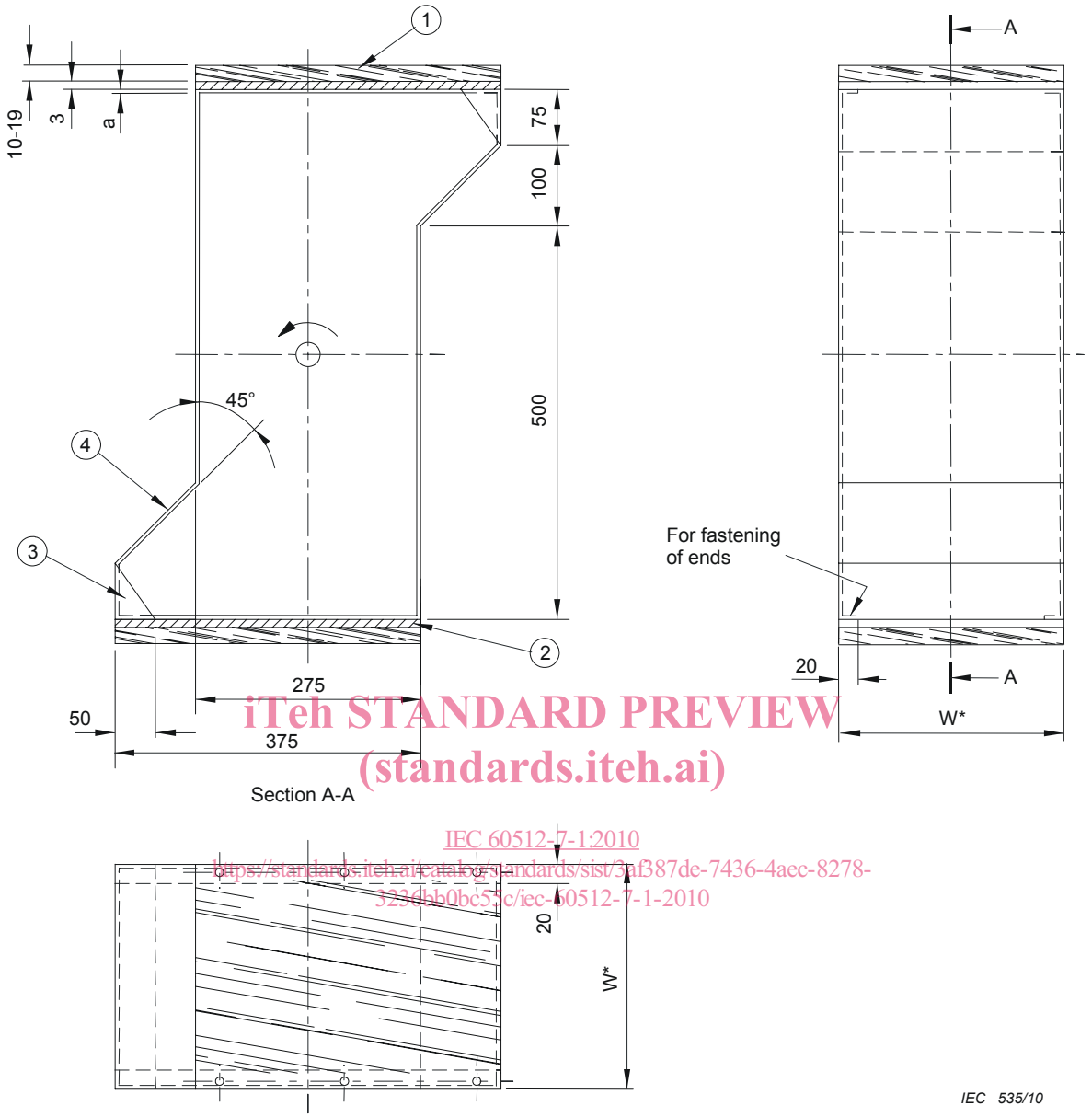

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Dimensions in millimetres

Key

1 Block of wood

2 Steel

3 Rubber

4 Plastics lamineted sheet

[a] The body of the rotating barrel is of steel sheet of 1,5 mm thickness

* For the value of W, see 4.1

Figure 1 – Tumbling barrel

6 Final examination

The specimen shall be visually examined according to IEC 60512-1-1.

If required by the detail specification, the operation shall be checked.

7 Requirements

There shall be no broken parts or damage that would impair normal operation.

8 Details to be specified

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

a) preparation of the specimen;
b) accessories to be installed, when appropriate;
c) wiring and wire length, when appropriate;
d) total number of revolutions (the number of falls is twice the number of revolutions);
e) operational requirements, if any;
f) any deviation from the standard test method.

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